Reducing Disability: Psychosocial Determinants Influencing Recovery (PDIR)

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Purpose and Intended Use

This resource was developed by the Industrial Insurance Medical and Chiropractic Advisory Committees (IIMAC & IICAC) of the Washington State Department of Labor and Industries. It provides concise summaries of published literature regarding assessment and management for biopsychosocial factors that commonly impact recovery from work injuries. This practice resource does not change L&I coverage or payment.

A comprehensive search of available literature on psycho-socio-economic (PSE) factors associated with common work injuries was conducted by a joint subcommittee of the IIMAC and IICAC along with department staff during fall 2015. Literature was reviewed and assessed for relevance and quality by two different individuals. Summaries of the relevant evidence were drafted by consensus of the subcommittee with expert content input from consultants and reviewers during spring 2016. The draft was distributed for public comment in June 2016. An updated draft was approved for distribution by the IIMAC, IICAC and department in July 2016. This resource is expected to be updated periodically. Interested parties are encouraged to submit new published reports for consideration for future revisions.

This and other practice resources are in the public domain and are available for download at the State of Washington Department of Labor & Industries website. Contact information for public input and submission of studies for future revisions is available there.

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PRACTICAL APPLICATION POINTS

- Psychosocial issues influence everyone. Intensity, magnitude, and individual abilities to handle them differ. Early identification of workers whose recovery may be negatively impacted by them helps match appropriate resources to address problems more efficiently and effectively.
- Simple routine assessment of worker's ability to cope with PDIRs they are dealing with informs further screening and helps guide care planning.
- Psychosocial determinants influencing recovery are distinct from mental health conditions and are best addressed as a component of the accepted work-related condition.
- Pre-existing mental health conditions may be best addressed as part of one's general health care or in some instances as a temporary barrier to injury recovery.

Psychosocial Determinants Influencing Recovery (PDIR)

- **Biopsychosocioeconomic (BPSE)** is a term to characterize biological, psychological, and socio-economical factors that play significant roles in health and disease. Attention to the psychosocial elements may facilitate successful recovery. Those non-biological factors most associated with impacting recovery from work injuries are characterized here as PDIRs.
  - ***Biological factors*** include the patient's pathophysiology as well as their overall level of conditioning. (Neither these factors, nor condition-specific interventions are directly addressed in this resource).
  - ***Psychological factors*** include thoughts, emotions, behaviors, attitudes, coping abilities and related areas that can impact recovery from a work injury.
  - ***Socioeconomic factors*** reflect the environmental, cultural, and economic factors that contribute either stress or support to the patient's recovery. Family, co-worker & provider attitudes, time, logistical issues, and financial obligations are examples.
- **PDIR factors versus Mental Health (MH) conditions**
  - **PDIR factors** can be present in health or disease. They may best be addressed as part of a condition rather than a separate entity.
  - **MH conditions** are distinct diagnosed problems. Work-relatedness may be controversial. MH conditions in workers' compensation claims may be best handled as an unrelated concurrent condition or barrier to recovery.

PDIR Topics

Addressed by attending provider (AP)

- Motivational interviewing
- Physical activation
- Patient education
- Self-efficacy
- Pain coping
- Support systems
- Relaxation
- Sleep hygiene

Addressed by specialist providers

- Vocational recovery
- Activity coaching
- Emotion/behavior management
- Acceptance and commitment therapy
- Resilience training
- Targeted brief interventions

Skill, capacity and interest of APs to address PDIRs varies; some may require support or specialty triage for complex cases. Community resources for addressing PDIRs also vary. No single type of facility or provider type is readily identifiable for PDIR interventions; however, the field is rapidly evolving. Currently, vocational recovery assistance, activity coaching and active care are the most developed and widely available worker-specific specialist-provided options.

PDIR Screening and Intervention

- The majority of injured workers recover fully without dedicated attention to PDIRs. It is recommended that routine patient intake include a direct patient question in the psychosocial history along the lines of "Do you think you're going to be able to handle everything that's going on?"
- Consider a screening scale to assess underlying factors with patients who express uncertainty or concern related to a full recovery.
- More specific PDIR and MH assessment scales should be considered for those patients with positive screening scales and/or less than expected improvement, *especially those who do not return to work within a couple of weeks*.
- Common PDIRs include recovery expectations, fear of activity, deactivation, loss of vocational connection, catastrophic thinking, perceived injustice.
- Important strategies for APs to use for PDIRs include education on normal recovery, incrementally increasing activity, addressing return-to-work, facilitating coping skills for relaxation or pain, setting and achieving incremental goals, expedient identification of inadequate functional improvement with triage for assistance.

"Stepped Care" Clinical Workflows across the Episode of Care

Intake By AP

- Assure psychosocial history includes family & social support systems, educational/occupational, emotional/social, military/legal, psychological, and substance use history.
- Determine worker's ability to cope with everything.
- If coping is a problem administer a basic psycho-social screening survey (e.g. World Health Organization Disability Assessment Schedule (WHODAS), Patient health questionnaire (PHQ)).

AP-provided PDIR Care

- When PDIRs are identified, assure that care addresses them.
- Incorporate PDIR interventions into AP care for these workers that addresses activation/activity diary, recovery expectations, fear or catastrophizing and other issues identified.
- For PDIRs or MH outside of AP expertise or ability to deliver, assure referral for such care is attempted.

Specialist-provided PDIR Care

- Become familiar with providers and referral options for rehabilitation, activity coaching, and psychosocial care that use evidence-based approaches to address PDIRs.

Mental Health Care

- Distinguish between PDIRs (intrinsic to anyone's injury recovery) and MH conditions (typically a pre-existing general health concern).
- Some circumstances may allow temporary care for a MH condition that is a discrete barrier to recovery for an accepted condition.
- Cognitive Behavioral Therapy interventions are the psychological approaches most validated to improve outcomes.

KEY RECOVERY MESSAGES FOR CLINICIANS TO CONVEY

About Pain

- Pain does not mean your body is being injured. Examples:
  - Putting a jalapeño on your tongue or exercising a body part enough for a muscle to start to hurt.
- Asking about pain:
  - What ideas can you think of for carrying on with your life while you have this pain?
  - How much does pain interfere with your ability to do general activities you want to do?
  - How confident are you that you can do (a particular activity)?
- About your pain:
  - Only new or sudden pain may signify tissue injury: Athletes have pain all the time.
  - You have pain now because your body has recently been injured; with time and activity your pain will begin to subside.
  - Instead of “how much it hurts”, think about “how does it interfere with what you want and need to do”.

Staying Active

- Activity is necessary for recovery
  - You should try to resume all your normal activities as soon as you can.
  - Resuming your regular activities will actually help your body recover faster.
  - Start with “baby steps;” even the easiest activity speeds recovery (walking, getting up and down, gently moving the injured part).
- Do just a little bit more each day (an extra 5 minutes, and extra 10 steps, lift just a couple extra pounds).
  - Set daily goals to reach (a weekly activity diary is helpful for this).
  - Focus on doing your normal routine.

Getting Better

- Almost all musculoskeletal problems will heal well. Flare-ups do not mean you are going backwards.
- Doing something early is much more effective than doing the perfect thing down the road.
- To get well, you must think, feel AND act differently.

Taking Baby Steps

- The most successful and sustainable gains start small and build over time.
- Recovery takes time and requires effort on your part, but you can do it.
- There is no elevator to the top; you have to take the stairs.

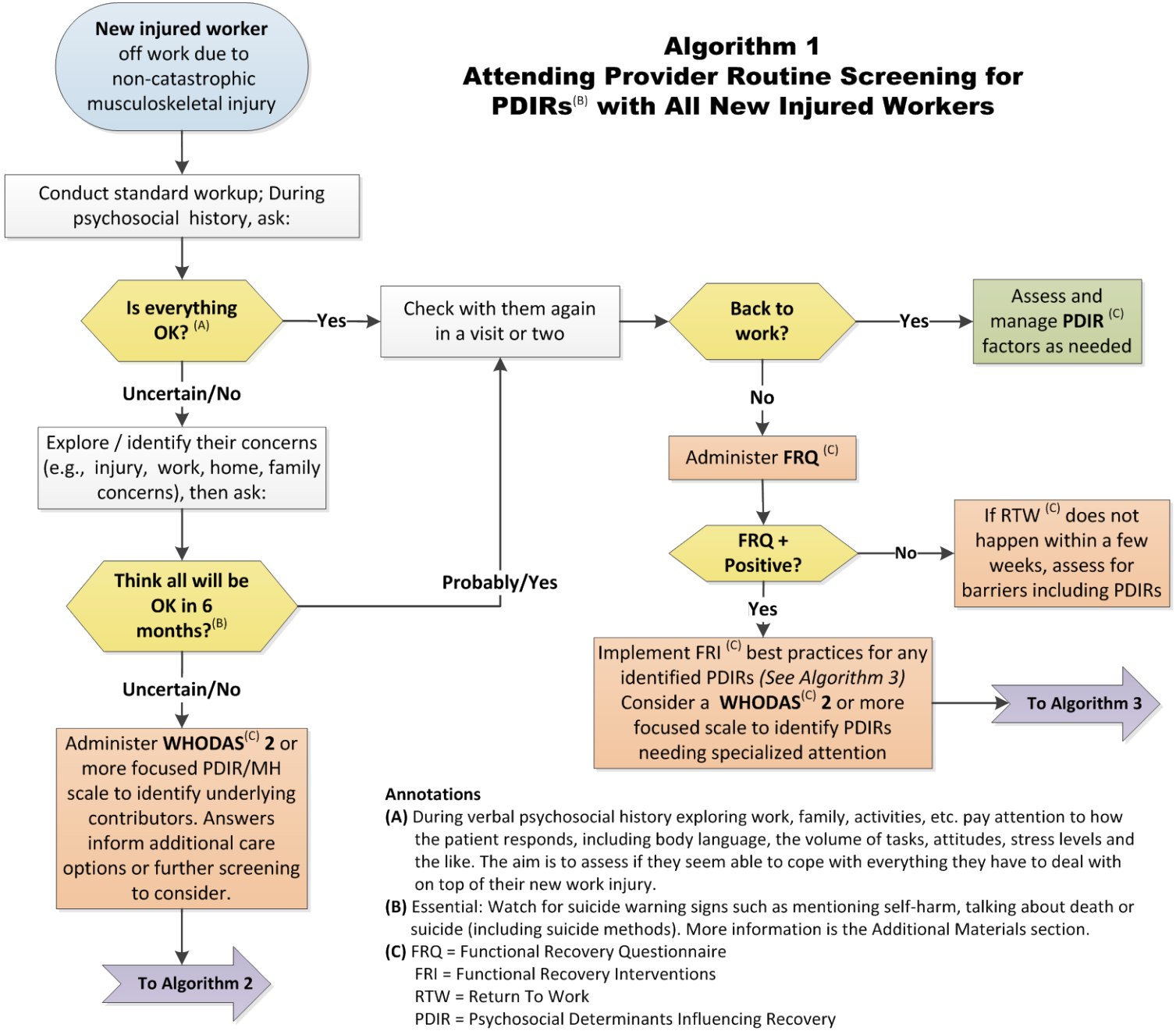
Dealing with Stress

- Everybody has stress – it’s normal. You can learn to handle stress and bounce back from difficult situations.
- There are many effective ways to relax your body and to cope with emotions.

Enhancing Sleep

- You can improve your pain and sleep without pills.
  - During the hour before bedtime do a peaceful, relaxing activity (play cards, read or watch something other than the news, listen to music).
  - Do not eat for a couple hours before bed time.
  - Think about things you like to do or want to dream about before going to sleep.
  - Doing some aerobic exercise earlier in the day (even walking) helps improve sleep.

Algorithm 1
Attending Provider Routine Screening for PDIRs[B] with All New Injured Workers



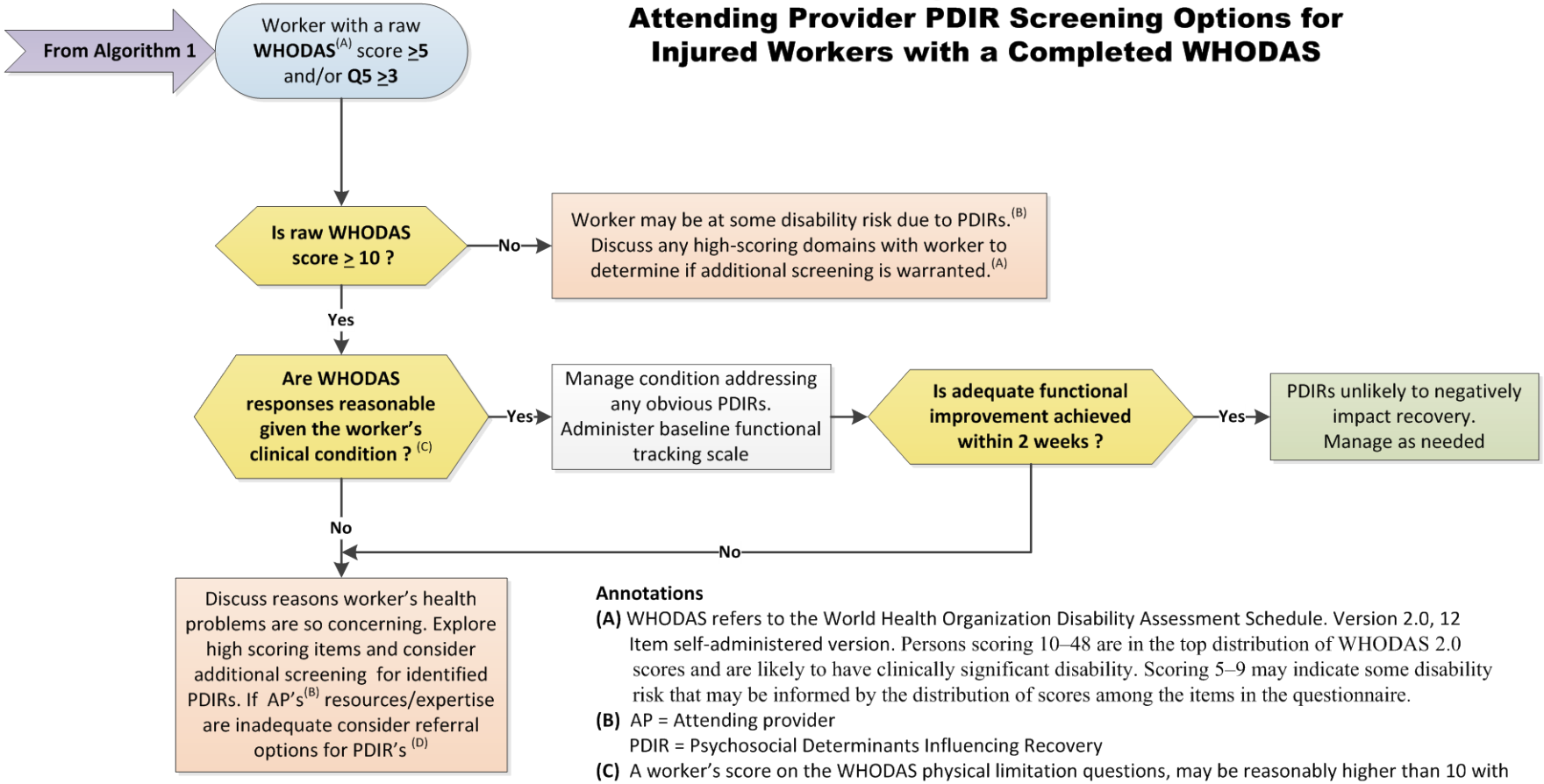
Annotations

(A) During verbal psychosocial history exploring work, family, activities, etc. pay attention to how the patient responds, including body language, the volume of tasks, attitudes, stress levels and the like. The aim is to assess if they seem able to cope with everything they have to deal with on top of their new work injury.

(B) Essential: Watch for suicide warning signs such as mentioning self-harm, talking about death or suicide (including suicide methods). More information is the Additional Materials section.

(C) FRQ = Functional Recovery Questionnaire
FRI = Functional Recovery Interventions
RTW = Return To Work
PDIR = Psychosocial Determinants Influencing Recovery
WHODAS = World Health Organization Disability Assessment Schedule

Algorithm 2
Attending Provider PDIR Screening Options for Injured Workers with a Completed WHODAS



Annotations

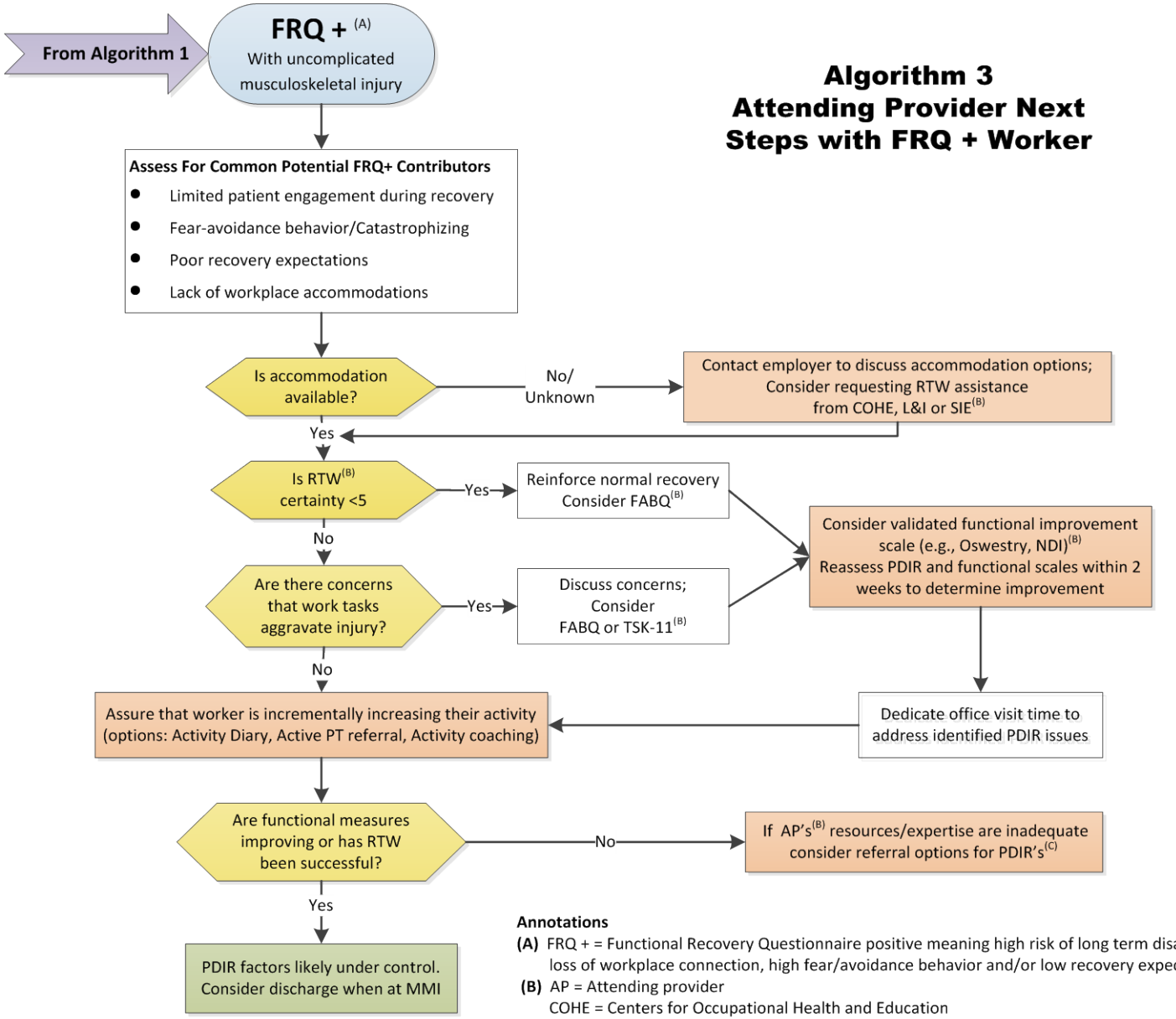
(A) WHODAS refers to the World Health Organization Disability Assessment Schedule. Version 2.0, 12 Item self-administered version. Persons scoring 10–48 are in the top distribution of WHODAS 2.0 scores and are likely to have clinically significant disability. Scoring 5–9 may indicate some disability risk that may be informed by the distribution of scores among the items in the questionnaire.

(B) AP = Attending provider
PDIR = Psychosocial Determinants Influencing Recovery

(C) A worker's score on the WHODAS physical limitation questions, may be reasonably higher than 10 with an acute injury such as a severe ankle sprain or low back sprain with radiculopathy. In such situations, WHODAS Question 5 scores ≥ 3 should trigger earlier exploration of PDIR and mental health concerns. Otherwise, a therapeutic trial of injury-focused care with close monitoring of functional improvement is reasonable.

(D) Referral options for additional PDIR support depend on the workers specific needs. Options may include a Progressive Goal Attainment Program (PGAP), triaging for various community or vocational services, or referral to a psychological specialist familiar with occupational health management.

Algorithm 3
Attending Provider Next Steps with FRQ + Worker



Annotations

(A) FRQ + = Functional Recovery Questionnaire positive meaning high risk of long term disability due to loss of workplace connection, high fear/avoidance behavior and/or low recovery expectations.

(B) AP = Attending provider
COHE = Centers for Occupational Health and Education
FABQ, NDI, TSK-11, Oswestry = PDIR screening/tracking scales (see appendix)
RTW = Return To Work
PDIR = Psychosocial Determinants Influencing Recovery
PGAP = Progressive Goal Attainment Program
PT = Physical Therapy
SIE = Self Insured Employer

(C) Referral options for additional PDIR support depend on the workers specific needs. Options may include a Progressive Goal Attainment Program (PGAP), triaging for various community or vocational services, or referral to a specialist familiar with occupational health management.

In the past 30 days, how much difficulty did you have in:
(circle number that best describes your difficulty)

	None	Mild	Moderate	Severe	Extreme/ Cannot Do
Q1 Standing for long periods such as 30 minutes?	0	1	2	3	4
Q2 Taking care of your household responsibilities?	0	1	2	3	4
Q3 Learning a new task, for example, learning how to get to a new place	0	1	2	3	4
Q4 How much of a problem did you have joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	0	1	2	3	4
Q5 How much have you been emotionally affected by your health problems?	0	1	2	3	4
Q6 Concentrating on doing something for ten minutes?	0	1	2	3	4
Q7 Walking a long distance such as a kilometer or half mile?	0	1	2	3	4
Q8 Washing your whole body?	0	1	2	3	4
Q9 Getting dressed?	0	1	2	3	4
Q10 Dealing with people you do not know?	0	1	2	3	4
Q11 Maintaining a friendship?	0	1	2	3	4
Q12 Your day-to-day work?	0	1	2	3	4

Disability Score = Sum of above _____

WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCHEDULE 2.0

Disability Score may inform additional screening and management options and be used to monitor progress

Functional Recovery Questionnaire

self-administered version

Name

Date

	Please indicate your answers in this column	***For Office Use***
1. During the past week have you worked for pay?	☐ Yes STOP here. You are done – thank you ☐ No Please continue	Yes = 0 No = 1
2. In the past week how much has pain interfered with your ability to work, including housework?	***Please circle one number*** 0 1 2 3 4 5 6 7 8 9 10 ***No interference*** ***Unable to carry on any activities***	< 5 = 0 ≥ 5 = 1
3. Do you have persistent, bothersome pain? ☐ No Please go to question 4 below ☐ Yes In the next column to the right, please indicate where you have pain	☐ Head ☐ Neck ☐ Shoulder(s) ☐ Arms/Hands ☐ Abdomen/Pelvic Area ☐ Hips/Buttocks ☐ Legs/Feet ☐ Chest/Rib Cage ☐ Upper/Mid Back ☐ Low Back ***without*** *any leg pain* ☐ Low Back ***with*** *pain, numbness, or tingling that travels down your leg*	No = 0 ≥ 2 areas AND/OR Low Back with leg symptoms = 1 *(Sum 1-3 = 3 means FRQ +)*
4. Since your injury, has your employer offered you light duty, part time work, a flexible schedule, special equipment, or other job modifications if needed to allow you to work?	☐ Yes ☐ No	***NOT SCORED*** *Q's 4-6 help identify reasons for FRQ + and may help inform care planing.*
5. How certain are you that you will be working in six months?	***Please circle one number*** 0 1 2 3 4 5 6 7 8 9 10 ***Not at all certain*** ***Extremely certain***	
6. Are you concerned that your work will make your injury or pain worse?	☐ Yes ☐ No	

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VALIDATED BRIEF PDIR and MH SCALES - *Summary*

There are dozens of scales available to assess risk factors for disability, screen for mental health and behavioral issues. The can help determine magnitude of psychosocial/coping factors, and that include psychosocial elements associated with certain symptoms/conditions. Tables in this section highlight easily administered and scored scales that have been validated to capture information especially relevant in injured worker populations. These scales are readily available and do not incur cost to use in practice, although a few request registration. Alternative scales that cover similar domains are indicated within the tables. A more complete listing of scales is in the Additional Materials Section.

Initial Screening	What it Measures	Validation	Availability	Time	Scoring
FRQ Functional Recovery Questionnaire Link: **FRQ**	Screens for long-term disability risk from work injury. Administered at about 2 weeks of time loss due to work injury. **Includes:** Do you have persistent bothersome pain? In the past week how much has pain interfered with your ability to work, including housework? **Domains:** Generic Screening, Disability **Similar Scales:** STarTBack	injured workers in Washington State [1]	• No cost or licensing	< 5 minutes	Items 1-3 determine positive risk: FRQ + means person has not worked for pay due to injury **and** pain interference ≥ 5/10, **and** pain in 2 or more body areas. Items 4-6 identify vocational connection, fear-avoidance, and recovery expectations which strongly correlate with risk.
WHODAS 2.0 -12 item World Health Organization Disability Assessment Scale Link: **WHODAS 2.0**	Informally assesses self-reported health status and disability. Administered at baseline suspicion of psychosocial or mental health issues and periodic follow-up for progress. **Includes:** How much have you been emotionally affected by your health problems? In the past 30 days, how much difficulty did you have in: Concentrating on doing something for ten minutes; Getting dressed **Domains:** Generic Screening, Disability **Similar Scales**: SF-36MH	Australian general health population [2, 3]	• No cost • Registration requested	~ 5 minutes	12 items each scored 0 (none) to 4 (severe) then summed. Total score suggests: No disability risk (0-5) Mild risk (6-10); Moderate risk (over 10).

MH Scales	What it Measures	Validation	Availability	Time	Scoring
CAGE-AID Cut down, Annoyed, Guilty, Eye opener - Adapted to Include Drugs Link: **CAGE-AID**	Screens for alcohol and drug problems conjointly, regarding response to 4 questions. **Includes:** Have you ever felt that you ought to cut down on your drinking or drug use? And Have you ever felt bad or guilty about your drinking or drug use? **Domains**: Addiction and Substance Abuse **Similar Scales**: AUDIT (new HVMC trauma)	North America Adults and Adolescents [4]	• No cost • No restrictions	< 5 minutes	One or more positive responses is considered a positive screen.
PHQ-4 Patient Health Questionnaire 4 Link: **PHQ-4**	Consists of first 2 items of PHQ-9 and first 2 items of GAD-7. Ultra-brief depression and anxiety screener. **Includes**: Over the last 2 weeks: I have been feeling nervous, anxious or on edge; I have little interest or pleasure in doing things **Domains**: Mental Health, Depression, Anxiety, Screening **Similar Scales:** PHQ-9, GAD-7, SF-36MH	Validated in general European population for anxiety and depression screening [5]	• No cost • No restrictions	< 5 minutes	Consists of 4 items scored 0 to 3 based on how often patient has experienced problems in the last 2 weeks. Scores are rated as normal (0-2), mild (3-5), moderate (6-8), and severe (9-12)

PDIR Scales	What it Measures	Validation	Availability	Time	Scoring
Brief COPE Brief - Coping with Problems Experienced Link: **Brief COPE**	Assesses various coping strategies used by individuals in response to stress. **Includes:** I've been giving up trying to deal with it; I've been trying to come up with a strategy about what to do **Domains:** Coping Skills **Similar Scales**: CD-RISC, BRS	Trauma survivors, inpatient psychiatric patients with severe mental illness, traumatic brain injury [6]	• No cost • No restrictions	< 10-30 minutes	14 scales of two items each, scored separately. Scored 1 (I haven't been doing this at all) to 4 (I've been doing this a lot). Higher scores indicate increased utilization of that specific coping strategy.
BRS Brief Resilience Scale Link: **Brief COPE**	Assesses ability to bounce back from stress. **Includes**: It is hard for me to snap back when something bad happens; usually come through difficult times with little trouble **Domains**: Coping Skills **Similar Scales**: CDRS, Brief COPE, SF-36 MH	Validated in multiple languages and populations [7]			Six questions scored 1-5 (strongly agree or disagree inverted rankings for different items). Score is averaged across all items.
CD-RISC Connor-Davidson Resilience Scale Link: **CD-RISC**	Self-reported scale measuring resilience in a quantifiable manner. **Includes:** *Can deal with whatever comes* And *Coping with stress strengthens* **Domains:** Coping Skills, Resilience **Variants:** CD-RISC 10; CD-RISC-2 (shorter 10 & 2 item versions) **Similar Scales**: BRS, Brief COPE, SF-36MH	Large community samples, trauma survivors, multiple ethnic groups and cultures [8]	• Requires registration and licensing payment	< 5 minutes	25 self-related items, each scored on a scale of 0 (not at all true) to 4 (true nearly all the time). Total score ranges from 0-100, with a higher score indicating greater resilience.
FABQ Fear Avoidance Beliefs Questionnaire Link: **FABQ**	Measures fear avoidance beliefs relating to physical activity and work, focusing on the effect and contribution to low back pain. **Includes**: I cannot do physical activities which (might) make my pain worse And My work aggravated my pain **Domains**: Fear-avoidance, Catastrophizing, Disability **Similar Scales**: FRQ, STarTBACK	Validated for fear-avoidance behavior with low back pain patients in multiple languages and populations [9]	• No cost • No restrictions	5-10 minutes	Scored using 2 subscales; one relating to physical activity and the other to work. Some items do not contribute to the overall score. A higher score represents elevated fear avoidance beliefs.
IEQ Injustice Experience Questionnaire Link: **IEQ**	Assesses perceived injustice associated with injury, and how that has affected the injured worker's life **Includes**: Most people don't understand how severe my condition is And My life will never be the same **Domains**: Injustice, Self-Efficacy **Similar Scales**: none	Validated in North American chronic pain, whiplash patients and patients in rehabilitation [10, 11]	• No cost • No restrictions	< 5 minutes	12 statements, scored 0 (never) to 4 (all the time). Higher scores indicate more perceived injustice. Among those scoring above 30, 76% remain unemployed 1 year post injury and 74% describe themselves as totally disabled.
LiSAT-9 Life Satisfaction Questionnaire 9 Link: **Lisat-9**	Assesses various aspects of life satisfaction, including vocational and family life. **Includes:** My family life is And my financial situation is **Domains**: Life Satisfaction **Similar Scales**: SF-36	Validated in multiple languages, cultures and conditions, catastrophic injury and terminal conditions [12, 13]	• No cost • No restrictions	10-30 minutes	Consists of 9 questions, items scored on a 6 point scale, from 1 (very dissatisfied) to 6 (very satisfied). Overall score is computed as the mean of the scores from each question.

MSPSS Multidimensional Scale of Perceived Social Support Link: **MSPSS**	Measure of an individual's perception of social support received from family, friends, and significant others. **Includes**: There is a special person who is around when I am in need; I can count on my friends when things go wrong. **Domains**: Social Support **Similar Scales**: n/a	Validated in clinically distressed populations in North America and Europe [14, 15]	• No Cost • No restrictions	10-30 minutes	Scored by calculating mean score among items. Lower scores are representative of a lower perceived social support system.
PCS Pain Catastrophizing Scale Link: **PCS**	Assesses catastrophic thinking related to pain; shown to predict chronicity. **Includes**: *When I'm in pain, I feel I can't go on And When I'm in pain, I keep thinking about how much it hurts* **Domains**: Pain, Catastrophizing, Self-Efficacy **Similar Scales**: Coping Strategies Questionnaire (CSQ), Pain-Related Self-Statements Scale (PRSS), Cognitive Coping Strategy Inventory (CCS).	Validated in multiple languages and countries [16]	• No cost • No restrictions	< 5 minutes	Consists of 13 questions on a 5 point scale. Scoring is 0 (totally disagree) to 4(totally agree). Higher scores indicate a higher degree of catastrophizing
TSK-11 Tampa Scale for Kinesiophobia Link: **TSK**	Measures fear of movement and re-injury. **Includes**: If I were to try to overcome it, my pain would increase And I am afraid that I might injure myself accidentally. **Domains**: Fear-Avoidance , Disability **Similar Scales**: n/a	Validated for fear of movement in chronic pain patients seeking treatment [17-19]	• No cost • No restrictions	5-10 minutes	Consists of 17 statements, scored by the patient on a 4-point scale of 1 (strongly disagree) to 4 (strongly agree). Higher scores represent a higher degree of kinesiophobia.
STarT Back Link: **STartBack**	A nine-item tool to assess disability risk with low back pain patients. Assesses presentation, fear-avoidance and disability beliefs. Used for baseline and follow-up. Does not appear helpful for prognosis. **Includes**: It's not really safe for a person with a condition like mine to be physically active; I feel that my pain is terrible and will get any better **Domains**: Fear-Avoidance, Disability. **Similar Scales**: FRQ, Pain catastrophizing scale (PCS), Fear avoidance belief questionnaire (FABQ).	Validated to predict disability risk in multiple languages for low back pain patients [20-22]	• No Cost • No restrictions	< 5 minutes	Nine items scored 0-1. Total score $\leq$ 3 reflects low risk. Total score $\geq$ 4 is sub stratified based on subscore of Q5-9 $\leq$ 3 being medium risk and $\geq$ 4 being high risk for developing disability.
WHODAS 2.0 -36 item World Health Organization Disability Assessment Scale Link: **WHODAS 2.0**	Assesses self-reported health status and disability more comprehensively than the 9-item. . 36-item version identifies: Cognition, Mobility, Self-care, Household tasks, Social (individual), Social (community). Administered at baseline suspicion of psychosocial or mental health issues and for follow-up progress. **Includes:** How much have you been emotionally affected by your health problems? In the past 30 days, how much difficulty did you have in: Concentrating on doing something for ten minutes; Getting dressed **Domains:** Generic Screening, Disability **Similar Scales**: WHODAS 2 -9 item, SF-36 MH	Validated in multiple countries, cultures and languages for multiple health conditions including musculoskeletal conditions and chronic diseases [23]	• No Cost • No restrictions	15 minutes	"none" (0), "mild" (1) "moderate" (2), "severe" (3) and "extreme" (4). These scores are then summed, with 0 indicating no disability and 100 indicating full disability.

AAQ-II Link: **AAQ-2**	Measures acceptance, psychological inflexibility, or experiential avoidance **Includes:** When I feel depressed or anxious, I am unable to take care of my responsibilities; I rarely worry about getting my anxieties, worries, and feelings under control **Domains:** Acceptance, avoidance **Similar Scales:** n/a	Validity and reliability shown to predict work absence and mental health outcomes [24]	• No Cost • No restrictions		Scale scored by summing the seven items. Higher scores equal greater levels of psychological inflexibility

Condition Scales	What it Measures	Validation	Availability	Time	Scoring
MPQ McGill Pain Questionnaire Link: **MPQ**	Measures current pain severity and character **Includes**: Sensory-Flickering/beating, sharp/lacerating; Evaluative-Annoying, troublesome **Domains**: Pain **Similar Scales**: Visual Analog Scale	Validated in multiple languages, cultures and conditions for characterizing pain severity, character and change [25]	• No cost • No restrictions	10-30 minutes	Composed of 78 words, respondents choose those that best describe their experience of pain. Scores are calculated by summing values associated with each word; scores range from 0 (no pain) to 78 (severe pain)
NDI Neck Disability Index Link: **NDI**	Assesses symptoms and severity of neck pain related to its impact on functional activities. Administered: baseline; 2-4 week follow-ups. **Includes**: I need help every day in most aspects of self-care and I cannot lift or carry anything at all **Domains**: Disability, Self-Efficacy, Activities of Daily Living **Similar Scales**: Bournemouth Neck Questionnaire	Validated in multiple languages and countries for assessing functional impact of neck pain [26, 27]	• No cost • No registration	5-10 minutes	Consists of 10 sections regarding various aspects of life, with 6 questions scored 0 to 5 in each section. Total points divided by 50, then multiplied by 100 will give you the percentage disability.
ODI Oswestry Disability Index Link: **ODI**	Assesses symptoms and severity of low back pain related to its impact on functional activities. Administered: baseline; 2-4 week follow-ups. **Includes**: I need help every day in most aspects of self-care And I cannot lift or carry anything at all **Domains**: Disability, Self-Efficacy, Activities of Daily Living **Similar Scales**: RMDQ, Bournemouth Back Questionnaire	Validated in multiple languages and countries for assessing functional impact of back pain [28]	• No cost • No restrictions	5-10 minutes	Consists of 10 sections regarding various aspects of life, with 6 questions scored 0 to 5 in each section. Total points divided by 50, then multiplied by 100 will give you the percentage disability.
PDI Pain-Disability Index Link: **PDI**	Assesses degree of perceived disability in 7 categories of life activities that are disrupted by chronic pain. **Includes**: Occupation and self-care categories **Domains**: Disability **Similar Scales**: FRQ, Pain Interference Scale, Québec Pain Disability Scale (QPDS)	Validated in multiple languages and cultures to differentiate with psychological overlay from physical based pain [29, 30]	• No cost • No restrictions	< 5 minutes	Scoring is on a 0 (No disability) to 10 (Worst disability). Scale based on overall impact of pain on life. The higher the overall score, the higher the worker's disability due to pain.

PSFS Patient Specific Functional Scale Link: **PSFS**	Self-assessed ability to complete activity prior to injury and current level of ability post injury. Used to quantify activity limitation and measure functional outcome for patients with any orthopedic condition. **Includes**: Any 3 activities that the injured worker is unable to do or has difficulty doing as a result of the injury or pain level. **Domains**: Disability, Activities of Daily Living **Similar Scales**: n/a	Validated in multiple languages for musculoskeletal conditions including work-related [31, 32]	• No cost • No restrictions	< 5 minutes	Patients rate their current ability to complete an activity on an 11-point scale at a level experienced prior to injury or change in functional status. A score of 0 represents "unable to perform" and a score of 10 represents "able to perform at prior level" A lower score represents increased patient difficulty in completing important activities.
RMDQ Roland-Morris Disability Questionnaire Link: RMDQ	Assesses self-rated physical disability caused by low back pain. Baseline and 2-4 week intervals **Includes:** I stay at home most of the time because of my back And My back is painful almost all the time **Domains:** Disability, Functional Limitations **Similar Scales**: ODI	Multiple countries, languages for self-reported low back pain conditions and workers in WA [33-35]	• No cost • No restrictions	10 minutes	Consists of 24 questions, with scoring based on response to a sentence that describes the patient at that moment, with final score a measure of disability. Score ranges from 0 (no disability) to 24 (max. disability)

PDIR ASSESSMENT AND MANAGEMENT BEST PRACTICES OVERVIEW

Psychosocial determinants influencing recovery (PDIR) and mental health (MH) issues are multifactorial. They range from essentially normal and usual reactions about life events to complex and confounding physiological/behavioral conditions. None are mutually exclusive. Further, individual tolerance and capacity for coping and managing these issues is extremely variable. The vast majority (90+%) of injured workers recover with usual care. Routine incorporation of PDIR or MH interventions for everyone is not intended. Rather, routine awareness and screening for PDIRs to identify those at increased risk of PDIRs slowing recovery is the focus of this resource.

In light of the number of validated screening tools, intervention options, patient & provider preferences, and concurrent health issues, there is no simplistic graphic or summary that can capture every nuance and situation where a provider should address PDIRs. Information in this resource is intended to assist in recognizing the when's and how's of PDIR's impacts on recovery. By facilitating awareness of options to identify and address PDIRs, providers help optimize workers' recovery.

General Approach for Psychosocial History and Treatment Planning

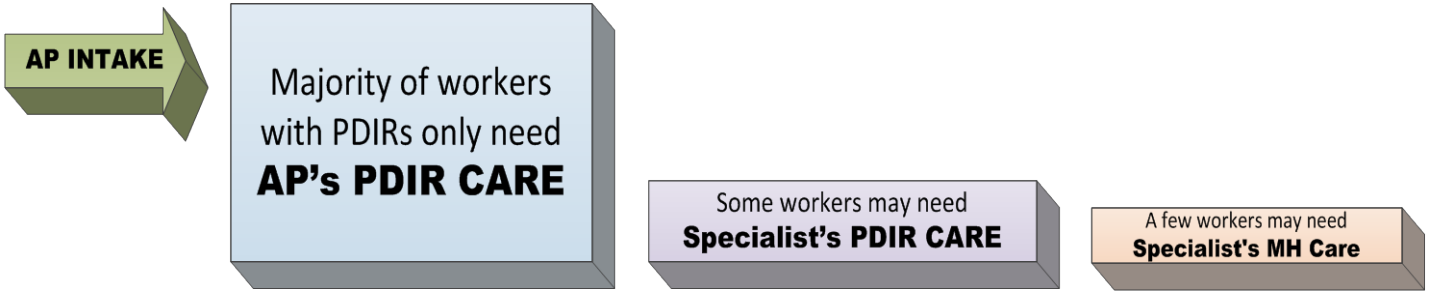
Intake, Screening & Triaging:

- If psychosocial history suggests a number of issues the worker must cope with, simply ask something along the lines of "Do you think everything is going to be OK?" If so, continue with care as usual and simply monitor for PDIR concern during the next few weeks.
- On intake, if overwhelmed or uncertain, consider administering a basic psychosocial screening scale such as WHODAS 2.0 or a more targeted scale for issues that appear to be emerging (e.g., PHQ-9, GAD-7).
- If screening tools suggest PDIR or MH issues are at play, consider asking something along the lines of "What do you think your state of mind was before the injury happened?" in order to get their sense of the role their injury may be playing.
- Depending on the magnitude of PDIR or MH issues identified, the AP should consider the worker's skills and abilities to manage any identified psychosocial concerns.
- Validated scales summarized previously should be used if the information gained is likely to influence care decisions. Fear and activity avoidance behavior, low recovery expectations, high catastrophic thinking and perceived injustice are among most common PDIR risk factors associated with return to work.

Intervention Options:

- AP managed intervention for straightforward PDIRs.
- Referral for specialty provider managed PDIR assessment & management:
  - Brief, focused interventions (stepped care approaches); combined programs such as activity coaching.
  - Community resource referral such as Project Help.
- AP managed intervention for straightforward MH conditions (e.g., mild depression, anxiety).
- MH specialist referral for PDIRs or concurrent mental health issues the AP is unable to manage.

"Stepped Care" Approach: Whenever an injured worker has psychosocial issues exceeding their ability to cope, "care-as-usual" may not be enough. Initially, straightforward and conservative approaches should be considered. Many PDIR interventions are common sense, intrinsic to usual clinical practice and easily handled by the AP and simply part of 'good doctoring.' Revisiting and reinforcing these interventions is critical with the small number of at-risk patients that may be identified. More complex or severe patients may best be referred to programs or specialists (e.g., activity coaching). Mental health interventions such as cognitive behavioral therapy for maladaptive behaviors would typically be provided by specialists. This resource organizes PDIRs as a stepped care approach as follows:



Clinical Context & Chronology: The conventional view of chronic pain often characterizes it as a time-based, linear progression: an acute problem that does not improve in a couple weeks "becomes" a sub-acute problem. If it's still not better in a couple of months it "becomes" a chronic problem. However, disability and emergence of chronicity are more complicated and nuanced. Numerous individual psychosocial factors contribute to development of chronic pain behaviors that are at least as important as slowness of recovery. Early attention to these factors may be a more promising approach to prevent chronicity.

Identification of PDIRs helps organize treatment for a work injury, as well as psychosocial support needs. Benchmarking functional improvement after care begins will trigger further assessment if meaningful functional progress, including return to work, is not achieved. Slower than expected recovery is a more important concern if the worker harbors maladaptive behaviors (e.g., catastrophic thinking, unfounded recovery expectations, escalating feelings of perceived injustice or victimization). The table below summarizes key considerations across episodes of care.

Clinical Context / Chronology	Assessment Practices & Options	Intervention Options
Initial Primary Care Visit for Injury **Include:** Psychosocial history for expected recovery, magnitude of concurrent life issues, coping ability, and common mental health concerns (e.g., depression, anxiety). **PDIR/MH Flags:** Negative or uncertain coping attitudes or recovery expectations; significant MH history; early involvement of legal representation.	**Routine:** Minimum psychosocial history; Assess response, body language to general inquiries about coping with everything that's going on. **PDIR/MH:** • WHODAS 2 for identified coping concerns. • Situation specific functional outcome tracking as appropriate.	**AP Usual Care:** Encouragement, normal recovery expectation setting (APF script), watchful waiting for PDIRs, incremental activity, job accommodation. **Triage/Referral:** • **PDIR:** AP manage initially; reassess if no return-to-work (RTW) within 2 weeks. • **MH:** If MH issues are identified and unaddressed, concurrent management under general health coverage should be encouraged.
1st Month Care & Follow-up **Include:** Reassess coping and work status weekly; utilize a functional progress tracking scale to help objectify and document what progress is occurring. **PDIR/MH Flags:** Slow recovery; No RTW; low recovery expectations; fear-avoidance behaviors; catastrophizing; feeling overwhelmed or frustrated (claim process, deteriorating workplace relationship).	**Routine**: If RTW fails, or progress stalls, reassess PDIRs, especially incrementally increasing activity and Early Return To Work assistance. Typically active care should be emphasized. Persistent pain and anxiety may also indicate inadequate sleep. System delays and claim issues that arise warrant attention. **PDIR/MH:** • FRQ if off work 2 weeks or unexplained RTW failure. • Deeper PDIR/MH screening (e.g., PHQ-9, TSK-11, PCS, IEQ) and tracking as appropriate.	**AP Usual Care:** Functional Recovery Interventions: • Critical conversations – recovery, fear/avoidance. • Incremental activity – activity diary. • Active care referral (e.g., PT/OT, DC, PMR). • Refer for employer assistance if no accommodation (HSC, ERTW). **Triage / Referral:** • **PDIR:** Combined PDIR program (e.g., PGAP). • **MH:** Unless new issues emerge PDIR management should suffice.
2nd - 3rd Months Care & Follow-up **Include**: Reassess barriers for RTW if needed, including assistance form Early Return To Work resources. Assure PDIRs are attended to if recovery is stalled, awaiting further intervention such as surgery. Consider referral for specialty PDIR interventions such as activity coaching.	**Routine**: If significant functional recovery does not occur within 3 months, likelihood of disability and job loss increases dramatically. Without clear justification, care plan modification should be a high priority. Specialty consultation, intensified rehabilitation options, and PDIR-MH consultation should be considered.	**AP Usual Care:** Intensified rehabilitation if RTW fails (e.g. work hardening); Assure alternate intervention options are considered if functional improvement is stalling. Assure employer assistance resources are engaged if needed (HSC, ERTW).

PDIR/MH Flags: Positive screen for PDIR/MH issues; ongoing focus and burden from pain; No or failed RTW; Active care compliance problems, expression of unfairness, escalating system issues (e.g., wage replacement, contested wages, employer protests).	**PDIR/MH:** • Consider intensified PDIR interventions e.g., activity coaching. • Consider PDIR or MH specialty consultation.	**Triage / Referral:** • **PDIR:** Catastrophic thinking and perceived injustice should be assessed (PCS, IEQ scales). • **MH:** Maladaptive behaviors or thinking should be explored and specialty referral considered as appropriate. Best practices for comprehensive collaborative care approaches are gradually emerging in some settings.
3rd - 6th Months Care & Follow-up **Include**: Chronicity risk increases; a comprehensive look for psychosocial barriers, pain behavior, and system adversity may be needed. **PDIR/MH Flags:** Deconditioning, perceived injustice.	**Routine**: If meaningful sustained improvement, including return-to-work, is not being made and is unexplained by the medical condition, changes to treatment plan should be considered. **PDIR/MH:** • Intensified PDIR interventions (e.g., activity coaching) are warranted. • Consider referral for comprehensive approaches as appropriate (e.g., work hardening, Structured Intensive Multidisciplinary Programs (SIMP), Cognitive Behavioral Therapy (CBT)).	**AP Usual Care:** In the absence of clear clinical justification, context of role aimed at treating physical condition shifts toward case management for more intense interventions to prevent chronicity. **Triage / Referral:** • **PDIR:** Structured program such as PGAP should be considered • **MH:** If MH flags, or maladaptive behavior patterns are emerging, consider specialty CBT referral.
Care Beyond 6th Months **Include**: Comprehensive pain evaluation. **PDIR/MH Flags:** Pain behavior, maladaptive thinking.	**Routine:** AP management may be insufficient. Referral for a more comprehensive multidisciplinary approach may be warranted. **PDIR/MH:** • Referral for comprehensive pain evaluation should be considered.	**Triage / Referral:** • **PDIR:** Structured pain program such as SIMP should be considered. • **MH:** If MH flags or maladaptive behavior patterns are newly identified, consider referral for CBT.

PSYCHOSOCIAL DETERMINANTS INFLUENCING RECOVERY (PDIR) CONCEPTS

The term Psychosocial Determinants Influencing Recovery (PDIR) encompasses non-pathoanatomic factors intrinsic to someone with a work injury. Workers' compensation benefits may not directly align with those in general health plans. Consequently, the workers' compensation system's responsibility (or lack thereof) regarding a patient's concurrent disorders can be a challenge for providers. For example, a person's severe cardiovascular disease may impact the speed of tissue healing in an ankle sprain, but the likelihood that the workers' compensation system would cover cardiac bypass surgery in the treatment of an ankle sprain is infinitesimal.

Mental health (MH) conditions can incur similar scenarios. Except for a workplace exposure resulting in an accepted diagnosis such as post-traumatic stress disorder (PTSD), a psychiatric or psychological diagnosis is not routinely accepted as a work-related condition from a typical musculoskeletal injury. Distinct from PDIRs, mental Illness is defined in WAC 296-20-330(a) as follows: "Mental illness means malfunction of the psychic apparatus that significantly interferes with ordinary living."

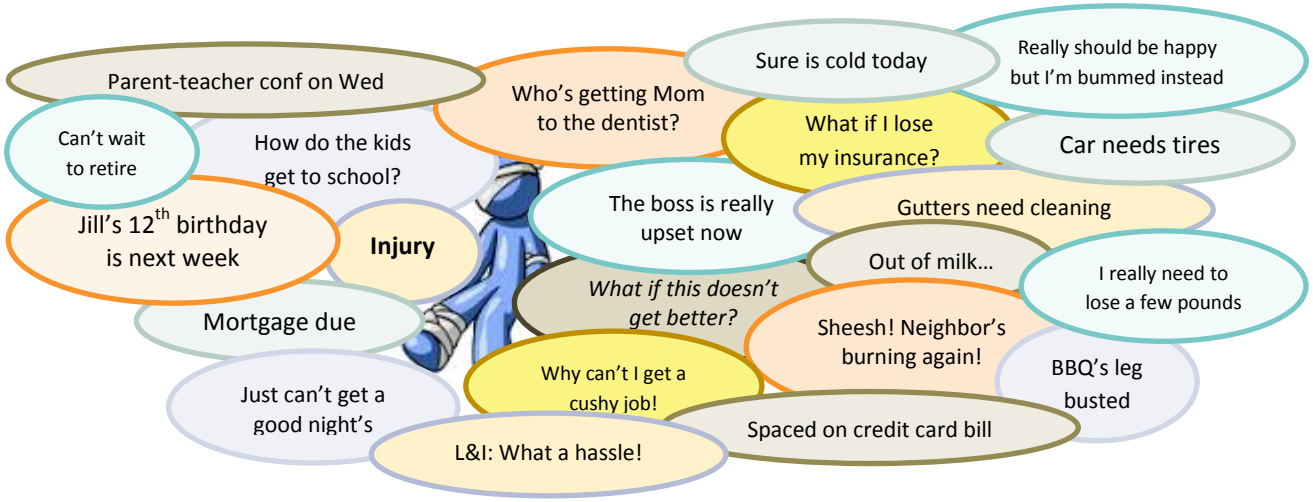
In Washington State, occupational stress is not allowable as the basis for a workers' compensation claim. (RCW 51.08.140; WAC 296-14-300) Although a failed recovery from a work injury may contribute to development of conditions (e.g., depression) that could eventually become accepted as a consequence of one's injury, emerging research and clinical best practices suggest preventing such a scenario by early identification and action for PDIRs may be preferred.

Basic PDIR Concepts

Workers' Compensation Perspective of Injury

Adapted with permission from Michael D. Harris, PhD

Worker's Perspective of Injury



Everyone experiences stress and has life challenges to cope with. A 1999 Surgeon General's report estimated that only 17% of the US population is in a state of "optimum" mental health.[36] The likelihood is high that some injured workers' psychosocial states may warrant attention during recovery. The range and magnitude of life stressors varies by individual as does one's ability to cope. Biopsychosocioeconomic factors, as well as concurrent mental health (MH) conditions (e.g., anxiety or depression) may become more significant when superimposed on a debilitating injury.

PDIRs: Distinct From Mental Health Conditions

Although overlap exists, distinguishing between PDIRs and MH conditions facilitates providing occupational healthcare. It is helpful to frame challenges posed by concurrent, pre-existing mental health conditions in a manner consistent with those posed by something like obesity. Deconditioning or obesity are unlikely to become an accepted occupational condition for which a gym membership or purchasing of healthy low calorie food would be approved treatment.

Although good for a worker, and potentially of benefit to injury recovery, such interventions are typically the patient's obligation. In some situations, however, a time-limited, specific goal-focused intervention for something that poses a tangible barrier to recovery for a work-related condition may be an option. Approval of a smoking cessation program prior to spine surgery is an example.

Psychosocial determinants (PDIRs) on the other hand may be best approached similarly to various physical findings that may occur with an injury. For example, reflex muscle tightness and tenderness can occur with a low back sprain. Some patients may have a lot, others not much. One can conceptualize PDIRs as psychosocial corollaries to "***findings***" with a physical diagnosis. Just as an accepted work-related condition of low back strain may involve physical findings such as muscle tightness or swelling, back injury may also be associated with fear avoidance behavior (such as avoiding activity in the injured area due to fear that it will be too painful or even harmful). Either finding (physical or psychosocial) may need to be directly addressed as a routine part of best practice 'primary' care for someone with a back injury. Both may be inherent to a diagnosis of low back strain, but need not be a separate diagnosis.

Attending Provider's (AP) Role

Routine psychosocial history and assessment is standard of care for most any provider or specialty. Contemporary thinking, and an increasing evidence-base, recognizes a significant role that psychosocial factors play in health and well-being. Competent clinical interviewing and counseling is within most any provider's skill sets; however, there are specific approaches and tools available that are particularly useful for providers choosing to treat injured workers. The vast majority of injured workers will recover fully without any special attention to chronicity or psychosocial risk factors. [37, 38] The algorithms on pages 3-5 illustrate an easily implementable, straightforward approach for any provider to help rule-in or rule-out which workers will most likely need dedicated attention for PDIR screening and identification, attending provider administered PDIR care, and/or triaging to resources and specialty services beyond the AP's skill set.

Intake for all workers should capture psychosocial factors in their lives, work, relationships, family, mental health status and stressors. During the verbal psychosocial history attention should be given to how the patient responds, including body language, the volume of tasks and obligations they are dealing with, attitudes, their stress levels and the like. The aim is to assess if they seem able to cope with everything they have to deal with on top of their new work injury. If they are, management as usual is recommended.

In those people who appear to be handling everything OK, but in whom a number of potential psychosocial issues were identified, it is recommended to pay close attention on follow-up visits to how they are coping with them. If there is difficulty getting back to work within a week or two, it is recommended that a disability risk questionnaire (Functional Recovery Questionnaire – FRQ) developed by the University of Washington for our injured worker population be administered. [1, 38] FRQ identifies if someone is at high risk of being disabled a year after their injury and indicates the workers understanding of accommodation at work, their recovery expectations, and fear of activity which helps the attending provider prioritize what needs attention. The FRQ is currently being utilized within some of the state's Centers of Occupational Health and Education (COHE) and attending provider resources are being developed to help implement PDIR interventions.

Should the psychosocial history reveal the worker may be overwhelmed with all that is going on, it is recommended that a World Health Organization Disability Assessment Schedule (WHODAS 2.0 - 12 item version) be administered which will provide insight into how much their psychosocial and mental health issues may be impacting their ability to cope with PDIRs and concurrent or emerging MH conditions they have. This questionnaire has been validated to assess if domains such as mobility, self-care, cognition, life & social obligations may be contributing to development of chronic disability. [2] This informs additional avenues for screening related to PDIRs and MH conditions.

Recovery and rehabilitation from an injury is not a static process. The number and intensity of PDIRS addressed can change over time. Deviation from an expected recovery trajectory may change or exacerbate PDIRS. The algorithms at the beginning of the document indicate that ongoing attention to PDIRs, and the patient's coping abilities, should be periodically revisited, particularly if return to work does not occur or is not sustainable. Prompt identification of PDIRs, changes in them, and the worker's coping abilities is critical for reducing risk of chronicity.

PSYCHOSOCIAL ASSESSMENT

The psychosocial assessment provides an overview of person's overall well-being. This assessment guides the provider's understanding of a person to help inform the best care options for them. At its most rudimentary, psychosocial assessment should determine a person's mental health status from their perspective and that of their family and/or social network. At its best, it should identify with some granularity the degree to which an individual is successfully coping with their life circumstances and challenges. From the standpoint of recovery from a work-related condition, priority should be given to identification of life issues and the person's coping responses, both overt and covert, that are likely to support or impede their recovery. There are no universal standards for specificity in a routine psychosocial history. Multiple specialties, disciplines, organizations, and institutions have recommendations regarding what should be included. For occupational health care, this resource emphasizes elements that may be related to risk of chronicity and delayed recovery. Psychosocial and mental health, and coping behaviors, are important generally, but particular aspects can be critical with work injuries. Additionally, workers' compensation benefits are limited to work-related conditions, and coverage for psychological conditions is subject to stringent rules and guidelines. Mental and behavioral health conditions are often best addressed as concurrent unrelated health concerns, or time-limited barriers to recovery from a work injury. The completeness of the initial psychosocial history not only optimizes clinical decision-making, but can help head off potential claims problems. The actions and choices made by a worker, for better or worse, have greater impact on recovery outcomes than those of any other stakeholder. It is of critical importance to assess current IW coping behaviors and support and encourage those which support fullest, most rapid recovery

Minimum Psychosocial History Elements

At a minimum, a psychosocial history on injured workers should include the following minimum elements useful for flagging potential psychosocial contributors to recovery:

- **Relationship/Family History** – Determine the types and level of support or stressors that exist at home. Are family members available to assist with home care and encouragement for the worker to attend to recovery (e.g., activity diaries, activity restrictions)? What obligation does the worker have to tend to (e.g., child or elder care)? Assess marital / intimate relationship status and satisfaction with it.
- **Educational/Occupational History** – Determine education level and job history (how long at various jobs, satisfaction with career, work tasks and environment, status of their current relationship with their employer and coworkers).
- **Emotional/Social History** – What is the workers general state of mind (happy, sad, fulfilled, anxious, depressed)? What activities do they like to engage in outside of work, what is their circle of friends like and how often do they engage in desirable activities? Ask about sleep habits (hours per night, how long it takes to get to sleep, what they do prior to bedtime).
- **Substance Use** – Alcohol, smoking, and drug use should be addressed including substances, amounts, frequency.
- **Military/Legal History** – Document military service, including combat experience; Determine if there is history of legal problems (incarceration, litigation) or other life experience that may contribute to significant stress, attitude development and the like.
- **Psychological/Psychiatric History** – Is there a history of any mental illnesses, treatment for depression or anxiety? Ask about family members.
- **Suicidal Ideation** – Are there any warning signs regarding self-harm, discussion of death or suicide, or seeking pills, weapons, or other means for suicide?

Comprehensive Psychosocial History Elements

Additional areas typical of thorough and specialist evaluation are summarized below. Various screening instruments are available that address these areas, and may be worth exploring when something is identified from a minimal psychosocial history. Links to additional resources are included where possible.

- **Violence Risk Assessment** – Concerns that may arise about a worker's safety (at home or the workplace) may warrant deeper assessment of such a risk. A variety of tools are available for basic screening and triage. However, the predictive accuracy varies depending on the setting and how they are used, but appear to be useful for identification of low risk.[39] The US Centers for Disease Control have developed a website for nursing that offers straightforward screeners for violence risk that may have applicability in other settings as well. http://wwwn.cdc.gov/wpvhc/Course.aspx/Slide/Unit6_8
- **Developmental History** – Although more prominent in pediatric care, developmental issues can contribute to behaviors, attitudes, and coping skills. From the standpoint of work injuries, a simple query along the lines of "Tell me a little about your upbringing, education and how life was..." may be able to assist in determining if further exploration may be appropriate.
- **Spiritual Assessment** – Spiritual and religious beliefs can be important to many people, and an understanding of a patients state of mind may help focus approaches for cognitive behavioral interventions. [40]
- **Cultural Assessment** – Perceived racial discrimination or cultural oppression may interfere with trust building and influence an injured worker's ability to interact well with the industrial insurance system. Significant differences in pain experience exist across different cultures. An understanding of cultural contributors may inform which intervention options, CBT strategies, and self-efficacy approaches may be most useful.
- **Financial Assessment** – Although not a domain directly addressed in a clinical setting, economic stress and obligations can contribute to a patient's

emotional state and recovery. It can be a motivator for return to work, or an obstacle to maintaining optimism for recovery. Referring a patient to resources that can help guide them through such issues (e.g., Project Help) may useful.

- **Coping Skills Assessment -** Coping ability may be especially important for some individuals. Screening tools such as Brief-COPE or a resilience scale can identify areas that need to be focused on.
- **Mental Status Examination –** This is a structured approach to describing a patient's current state of mind (appearance, attitude, behavior, mood / affect, speech, thought process, thought content, perception, cognition, insight and judgment). A comprehensive mental status evaluation would only be expected in specialist psychiatric or psychology practices

Sample Questions & Interviewing Approaches Regarding Psychosocial Factors

- "Tell me a little about how things are going for you outside of work..."
- "Life can be pretty challenging for all of us these days. How's yours going?"
- "It would be helpful to know a little background about your spouse and children. Tell me about them..."
- "Have you or anyone in your family ever had concerns about how much you drink, etc.?"
- "We all have to deal with a lot of stress in life. How is yours and what do you do to handle it?"
- "Have you ever talked to or wanted to talk to a psychologist or counselor about anything? How did it go?"
- "Tell me a little about your upbringing, education and how life was..."

PDIR and MH SCREENING and TRACKING SCALES

Numerous validated psychosocial and mental health scales are available for screening and tracking progress of various PDIRs and MH conditions. Scales have been used in research and clinical settings for screening, diagnosing, and monitoring progress. They may help inform care planning and triage decisions as well as track progress where a given issue is prominent. However, unless the information gleaned from such scales meaningfully measures clinical progress, or assists in making care plans (e.g., specialty referral, a change in planned treatment), routine utilization of lengthy or detailed scales is not warranted. A summary table of commonly used scales is included in the summary section and a more comprehensive listing with descriptions and links is located in the additional materials section.

WORKERS' COMPENSATION ISSUES

Workers have normal apprehensions, a multitude of life obligations and stresses. They also vary in their degree of coping skills. In some instances dedicated attention from the attending provider may be necessary for facilitating recovery. Sometimes an existing mental health condition may be significant enough that it impedes recovery from a work injury. Although the development of chronic pain can be associated with many PDIRs and mental health conditions (such as depression), the aim of this resource is the early identification and intervention for psychosocial issues that are known risk factors for longer term disability. Causality relationships between work injuries, PDIRs and mental health conditions remain inadequately researched.

Causation & Work Relatedness

The psychosocial determinants influencing recovery (PDIRs) outlined in this resource focus on those expected reactions and apprehensions that may be intrinsic to injury recovery. For the vast majority of work injuries, doctoring as usual and common sense are enough to deal with them. However, for some individuals, more sophisticated screening (as delineated in the algorithms at the beginning of the resource) can help the attending provider focus in on what issues may be problematic and help guide care. Providers usually incorporate psychosocial interventions without identifying them as such. If the worker is concerned about their recovery from an injury, the attending provider reassures them about the treatment options, and utilizes patient education and counseling approaches to explain controlling their pain ("pain-coping"), normal recovery ("recovery expectations"), and being aware of what set things off ("mindfulness").

It is helpful to consider PDIRs as intrinsic to musculoskeletal injuries, similar to the way one considers muscle guarding with a sprain and strain injury. Although it would not necessary be delineated as the stand alone primary diagnosis on workers' compensation claim, the attending provider would typically factor it into management. Alternatively, when concurrent bona fide mental health problems exist, they may need to be addressed in a fashion similar to any other concurrent health conditions. Although it would not be accepted directly as work-related, short term interventions referring for care under their general health plan, or in some instances obtaining pre-authorization for temporary treatment as a barrier to recovery may be appropriate.

INTERVENTION OPTIONS BY CONDITION OR SITUATION AFFECTING RECOVERY

This section summarizes some of the more common situations where psychosocial determinants influence a person's recovery and which intervention options may be worth consideration. Typically, most situations should be amenable to the APs direct care for PDIRs. Referral to an experienced provider for brief psychosocial interventions may be appropriate in some instances, and a referral for a mental health specialist's care may be appropriate in some situations.

Fear of Worsening & Activity Avoidance – Consider:

AP:

- Ask about what specific work activities are of concern.
- Ask what the worker thinks could be done to modify activities so they could do them.
- Utilize an activity diary to negotiate daily activities they could do and incrementally increase them each day.
- Patient education about recovery and "hurt not meaning harm".
- Administer a TSK-11 scale if particularly intense or avoidance behavior persists unreasonably.

Specialized PDIR Options:

- Time-limited physical therapy that includes active care (e.g., graded exercise) with specific functional improvement goals.
- Progressive Goal Attainment Program (PGAP).

Mental Health Specialist Options:

- Typically not necessary.

Low Recovery Expectations – Consider:

AP:

- Patient education on normal recovery.
- Reassurance about effective care options.
- Administer a functional status scale and follow-up to objectively document improvement.

Specialized PDIR Options:

- Typically not necessary.
- PGAP or structured program focusing on functional improvement if progress stalls.

Mental Health Specialist Options:

- Typically not necessary

Catastrophic Thinking – Consider:

AP:

- Try to understand the basis for any unfounded concerns.
- Patient education directed at incorrect beliefs and understanding.
- Administer PCS or CIEQ scale to assess magnitude if such thinking persists.

Specialized PDIR Options:

- Progressive Goal Attainment Program (PGAP) for persistent or high magnitude PCS score.

Mental Health Specialist Options:

- Cognitive Behavioral Therapy (CBT) may be appropriate for high magnitude PCS score.

Employer-related issues – Consider:

AP:

- Set expectation early that successful return to work is part of a successful clinical outcome.
- Day 1: communicate with employer if work will be missed due to injury, especially if modified duty is needed.
- If employer expresses any resistance or inability to accommodate, mention that L&I may have programs to help pay for bringing someone back to work. Contact claim manager regarding early return to work (ERTW) assistance.
- Identify and document worker's concerns (conflict in the work place, not honoring restrictions, peer pressure) and explore options to address them.

Specialized PDIR Options:

- Health Services Coordinator if part of a COHE, or request the claim manager for early return to work assistance.
- Conflict resolution counseling for significant interpersonal conflict.

Mental Health Specialist Options:

- Typically not necessary.

Family / support system issues – Consider:

AP:

- A patient's support system (e.g., family members, close friend) can be instrumental in a worker's recovery.
- If recovery is not progressing as expected, involve family or friends to help align support with patient goals (e.g., compliance with homework, activity).
- Schedule a brief office visit for counseling with the patient and close friend or family member to gain insight into the worker's efforts outside the office and enlist their support and encouragement with the recovery plan.

Specialized PDIR Options:

- Referral for brief psychosocial interventions (e.g., activity coaching, counseling sessions with psychologist).

Mental Health Specialist Options:

- Typically not necessary.

Inadequate understanding or expectations of diagnostic and treatment options – Consider:

AP:

- Use 'teach back' to clarify patients understanding of diagnostic and treatment plans (ask them to explain what their care plan is)
- Patient education regarding utility and limitations of various diagnostic tools (e.g., an MRI is only helpful under very specific circumstances and can even start you down a wrong path).
- Determine if there are unfounded expectations of particular treatments and address them (e.g., surgery is only effective for certain causes of back pain, side effects of some medications are more problematic than any benefit they offer).

Specialized PDIR Options:

- Typically not necessary.

Mental Health Specialist Options:

- Typically not necessary.

Inadequate understanding or expectations about the industrial insurance process – Consider:

AP:

- Encourage written communication with claim manager and re-assure consistent documentation in patient's chart.
- Refer for support resource such as Project Help.

Specialized PDIR Options:

- Typically not necessary.

Mental Health Specialist Options:

- Typically not necessary.

It is essential for attending providers to engage patients in their own recovery. Approaches range from how one asks a question to tools for prescribed activities given to a patient to facilitate buy-in and compliance. Interventions called out here broach familiar territory, however some terminology for techniques and delineation of particular approaches appear less familiar. Basic guidance aimed at patient involvement in their own recovery underlies PDIR interventions. Facilitating patient's attitudes, compliance with prescribed 'homework", keeping office/PT visits, self-care (appropriate physical conditioning and emotional management), among others are basics of good patient care.

Many PDIR topics overlap or cross-reference each other, and often used in combination. Variation in methods and terminology exists, as does research quantity and quality. Quantitative meta-analyses and systematic literature reviews are highlighted, but most work to date has not been done on injured worker populations. Chronic pain populations and multiple chronic health conditions (diabetes, heart disease, substance abuse) tend to be the focus of research. It is reasonable to think that strategies shown to impact behaviors in one population may be useful in musculoskeletal conditions; however, behavior change is multifactorial and following up is important.

Addressing PDIRs when present is sensible for all patients, but is ***especially important for workers with low recovery expectations, high fear/activity avoidance, catastrophic thinking or those experiencing significant perceived injustice***. PDIRs are also critical to address with workers experiencing a high volume of issues to cope with on top of their injury, and workers who have sub-optimal coping skills. PDIR interventions should be within most primary care providers' comfort and expertise zone for straightforward situations. The degree to which an AP addresses PDIRs is a provider decision, and some may delve deeper into the interventions depending on practice setting and style. For more complex patients whose level or combination of PDIRs exceeds an AP's capacity, referral to specialists that can devote greater expertise and effort with PDIRs may be appropriate.

AP-Provided PDIR Options

- Motivational Interviewing
- Physical Activation
  - Activity Diary
  - Rehabilitation / Exercise
- Patient Education
  - Positive workplace connection
  - Understanding their injury and pain
  - Overcoming unrealistic fear
  - Pacing oneself
  - Problem solving
  - Goal setting
  - Coping with emotions / mindfulness*
- Self-Efficacy
- Pain Coping (tailored to patient)*
- Support Systems
  - Patient obligations (time, finances, child care, etc.)
  - Support resources (personal, community)
- Relaxation Training and Techniques*
- Sleep Hygiene & Management*
- Referral to PDIR and MH specialists**
  - Vocational Recovery Services
  - Activity Coaching
  - Targeted Brief Interventions
  - Cognitive Behavioral Therapy (CBT)
  - Structured Chronic Pain Programs
  - Substance Abuse Treatment

Specialist-Provided PDIR Options (Brief Interventions)

- Vocational Recovery and Rehabilitation
- Activity Coaching
- Emotion Management / Behavioral Training
- Acceptance Interventions
- Resilience Training
- Targeted Brief Interventions (e.g., CBT by psychologist, collaborative care support)

Specialist-Provided Mental Health Interventions

- Cognitive Behavioral Therapy
- Structured Chronic Pain Programs
- Other Psychotherapies

Medication Management

- Opioids
- Psychotropics
- Sleep Medications
- Substance Abuse Treatment

* Straightforward consultation / counseling in these areas may be within AP's capabilities and skill sets, but alternatively may be addressed by referral for more intense specialist-provided PDIR approaches/brief interventions

** In collaborative care settings, referral, or consult with trained PDIR specialists may be available.

PDIR interventions should be part of usual best-practice care by attending providers who treat injured workers. Providers commonly utilize these approaches, yet may not have organized or labeled them in this way. Traditionally, routine PDIR assessment has not been as differentiated and formalized as is reflected here. However, for individuals with existing or escalating PDIRs, it is important that attending providers address them with greater intensity before they have a chance to contribute to prolonged chronicity. For workers having greater magnitudes and intensities of factors, more formalized specialist-provided PDIR intervention options are addressed in the next section.

Motivational Interviewing (MI)

Motivational Interviewing utilizes communication and counseling approaches to facilitate and engage a patient's own motivation to change their behavior. [41-44] It is a goal oriented, patient-centered strategy to enhance the patient's ownership in clinical decision-making and has been utilized in an occupational health setting, engaging the patient toward an active role in injury recovery includes targeting functional improvement and return to work as clinical outcomes goals. Individuals vary in their readiness to make changes in behavior. The approach has been studied in various populations and for conditions ranging from chronic pain to diabetes. In general the approach has utility for facilitating early adherence to increasing activity but usually requires persistence and repetition from the provider.[45] Some effects may be sustainable, but impacts on improved physical functioning among chronic pain sufferers do not appear to result from MI. [46] It may also speed improvement in patients with severe anxiety when used to tailor cognitive behavioral interventions.[47]

Related/similar approach: Motivational Enhancement Therapy

MI Strategies:

- ***Ask Permission***
  - I noticed on your medical history that you have difficulty getting a good night's sleep. Do you mind if we talk about how different lifestyles can affect sleep?
- ***Evoke Change Talk***
  - What would you like to see different about your current situation?
  - What makes you think you need to exercise more?
  - What will happen if you don't get back to your job?
  - What will be different if you complete the PGAP program?
  - What is the best thing that could happen if you get back to your job?
  - What would you need to do to make this happen?
- ***Ask How To Be Supportive***
  - How can I help you get past some of the difficulties you are dealing with?
- ***Utilize Reflective Listening***
  - I get the sense that you want to get better, but you have concerns that you won't be supported by your co-workers with your light duty.

Relevant MI Studies:

- A 2005 meta-analysis identified 72 randomized trials since 1991 that evaluated motivational interviewing for behavioral problems ranging from alcohol abuse, smoking, to lifestyle compliance for diabetes. [45] Many of the studies primarily emphasized traditional advice-giving. Significant combined effect estimates effects (95% confidence interval) were identified for body mass index, total blood cholesterol, systolic blood pressure, blood alcohol concentration and standard ethanol content. Combined effect estimates for cigarettes per day and for HbA1c were not significant. MI utilized by physicians and psychologists was effective in 80% of studies with equivalent effectiveness in both physiological and psychological conditions. Only 46% of studies where MI was utilized by other providers reported clinically relevant effects. Of the studies utilizing 15 minute encounters, 64% showed an effect. Effectiveness increased with multiple encounters.
- A 2008 randomized trial of 60 older chronic heart failure patients with limited physical activity evaluated addition of MI for a physical lifestyle intervention to usual care compared to usual care alone. [48] Quality of life as measured on SF-36, Minnesota Living with Heart Failure questionnaire, and the Motivation Readiness for Physical Activity scale was improved compared to controls in several dimensions. After treatment, there were significant improvements in all measured variables for patients in the MI group (although there was a trend towards improvement in both groups). This study suggests that a systematic approach for motivational interviewing can improve activity adherence with resultant improvement in quality of life.
- A systematic review in 2015 used meta-analytic procedures to synthesize medication adherence interventions to focus on adults with hypertension.[49] Effect sizes were calculated for 112 eligible treatment vs. control group outcome comparisons of 34,272 subjects. The overall standardized mean difference effect size between treatment and control subjects was 0.300. Interventions were most effective among female, older, and moderate- or high-income participants. The most promising intervention components were those linking adherence behaviors with habits, giving adherence

feedback to patients, self-monitoring of blood pressure, using pill boxes and other special packaging, and motivational interviewing. The most effective interventions employed multiple components and were delivered over many days.

- A “wellness service” program tracked a comprehensive array of annual follow-ups of key health indicators (i.e. cardio-respiratory fitness, body mass index, blood pressure, total cholesterol, high-density lipoproteins, lung function and percentage body fat) and incorporated motivational interviewing on lifestyle advices to increase physical activity and make diet changes. [50] Of 2,651 university employees who participated in the program, 427 respondents were followed for a four year follow up. For those with an 'at risk' health profile from baseline, improvements were maintained in subsequent follow-up assessments. Improvement from baseline to 1-year follow-up was observed for all health indicators as was the maintenance of this improvement in years 2, 3 and 4. Although essentially a well-done case series deign, the study illustrates that MI appears useful in a general population with at risk individuals.
- In a retrospective cohort of a population of patients with comorbid hypertension and diabetes mellitus (N=186), a pharmacist telephone intervention was used among randomly selected patients who were non-adherent to medication. [51] The intervention included a standardized template to guide the conversation and address barriers to medication adherence. Telephone intervention incorporated elements of Motivational Interviewing, such as encouraging patients to relate pill-taking to daily activity and setting automatic reminders to aid in adherence. In both linear and logistic regression analysis, intervention was a significant predictor of better adherence after adjusting for baseline covariates.
- A 2016 comparative study on subjects with severe generalized anxiety disorder reported on outcomes from 15 sessions of cognitive behavioral therapy (CBT) alone (n=43) versus 4 session of motivational interviewing followed by 11 sessions of CBT tailored by the information gained from the MI sessions. [47] No differences in between-group outcomes were reported, however a steeper rate of distress reduction was seen in the combined group. There were twice as many dropouts (23% vs. 10%) in the CBT only group.
- A 2009 systematic review included 15 studies related to the efficacy of motivational interviewing for promoting lifestyle changes and improved functioning in older adults. [52] Covering various areas from diet and exercise to alcohol consumption, results consistently demonstrated that motivational interviewing is an effective approach for achieving behavioral changes. Further, telephonic motivational interviewing was found to be an acceptable methodology that allows increased ability to extend treatment to patients.
- A training program was implemented to increase the dissemination of motivational enhancement therapy (MET) among the Veterans Health Administration. [53] A cohort of 264 participants underwent a training program to increase knowledge and skills related to MET. At conclusion of the training, 81% of the participants demonstrated competency, and 85% of clinicians reported implementing MET in practice.
- In a population of 42 pregnant women reporting alcohol consumption, participants were randomly assigned to receive written information or MI. [54] After a 2 month follow-up, remaining participants showed a significant reduction in alcohol consumption. In participants reporting the highest BAC at baseline, those undergoing MI showed a significant reduction in BAC at follow-up compared to the control group.
- A meta-analysis of motivational interviewing to reduce illicit drug use in adolescents identified 10 randomized trials meeting inclusion criteria. [55] No statistically significant effect of MI on change of drug use behaviors was reported in an adolescent population, but there was a significant effect on positive attitude change regarding illicit drug use. While not directly influencing drug use, MI shows promise as a method for influencing intention to change behaviors and may be useful in treatment.
- A randomized controlled trial of 307 participants reporting hazardous drinking or drug use with PHQ scores ≥5 were assigned to received MI or printed literature as adjuncts to usual care. [56] At 6 months, MI was more effective than the control in reducing rate of cannabis use ($p = .037$); and hazardous drinking (≥4 drinks in a day for women, ≥5 drinks in a day for men; $p = .060$). In logistic regression, assignment to MI predicted lower cannabis use at 6 months ($p = .016$) after controlling for covariates. Depression improved in both conditions.
- A 2003 case series study used MI to assist diabetic adolescents in glycemic control.[57] Twenty two patients were assigned to participate in MI sessions and various psychological and diabetes related factors were assessed. Over the course of the study mean HbA1c significantly decreased in the population and remained low through the end of the study. Fear related to hypoglycemia and fear of diabetes were also significantly reduced.
- Exercise counseling intervention was studied in a small cohort of minority adults having a history of heart failure.[58] Twenty subjects received MI based exercise counselling, then were followed via phone for 12 weeks to assess exercise, symptoms, and weekly goals. Noted improvements in physical activity (via step count) as well as functional capacity and self-care behavior were reported. Small sample size, but demonstrates utility in improving activity levels with even short MI based counselling. However, motivation for compliance seems likely to be more intense with a life threating condition such as heart failure.
- CBT alone (n=43) was compared to CBT with motivational interviewing (n=42) in a 2016 study. [47] No differences were reported in primary between group outcomes, but a larger rate of distress reduction was seen in the combined group. There were also twice as many dropouts in CBT group.

Physical Activation

Remaining active, performing exercise, being compliant with rehabilitation is typically the domain of active care which has shown to be effective for a number of musculoskeletal conditions, especially back and neck pain conditions. However, being disciplined and compliant with setting functional improvement goals, incrementally increasing daily activity, using an activity diary and performing graded exercises rarely is achieved with a simple recommendation. Dedicated attention, encouragement, reinforcement, expectation setting, and workflows (such as calling between office visits to remind the worker to complete and bring their activity diary with them to an appointment) by the attending provider facilitates compliance, thus a better recovery. In addition to the physiologic and therapeutic effects of active tissue movement, the facilitation of behavior change associated with increasing the worker's activity assists in improving recovery expectations, reducing catastrophic thinking, overcoming avoidance behavior.

Related/similar approaches: Activity diary, graded exercise, active care.

Physical activation strategies:

- Negotiate a few activities or exercises a patient can do and use a weekly activity diary to incrementally increase the frequency, duration, and/or intensity of the activity/exercise a small predetermined amount every day.
- Strive for activities to be "quota" limited, rather than pain-limited. The ability to achieve goals, work through increasing function even with pain can be important for self-efficacy as well as tissue healing.
- If providing or referring for physical therapy, chiropractic or other manual care, assure that functional improvement goals are set and being met.
- Utilize a validated functional tracking tool to quantify progress.

Relevant physical activity studies:

- A 2005 quantitative systematic review of exercise for chronic non-specific low back pain identified 43 trials of 72 distinct exercise treatments and 31 comparisons reported that individually designed programs of stretching or strengthening improves pain and function to a greater extent than most comparisons. [59] Greater effects were seen with better adherence to programs, higher "dose" programs, and when done in combination with other effective conservative interventions.
- A 2001 systematic review[60] examined the evidence for causal relationships between physical activity (PA) and low back pain (LBP), osteoarthritis (OA), and osteoporosis (OP), and for dose-response relations involved. PA can be effective in preventing LBP but prolonged, heavy loading can lead to LBP. Specific exercises have not been found effective in treatment of acute LBP, but PA can be effective in chronic LBP, especially for diminishing the effects of deconditioning. No evidence indicates that PA directly prevents OA. Large amounts of intensive PA involving high impacts or torsional loadings or causing injuries increases risk of OA. Light or moderate PA does not increase the risk of OA. PA can be effective in the treatment and rehabilitation of OA. High-intensity loading is osteogenic and possibly useful in prevention of OP at the loaded site, but low to moderate loading is not osteogenic. Static efforts and slow movements are ineffective or less effective than fast application of force.
- A 2010 systematic review of approaches for the management of Low Back Pain (LBP) concluded that subjects' post-treatment pain intensity, disability and long-term function improved more with exercise therapy compared to usual care.[61] Behavioral treatment was reported to be effective in reducing pain intensity at short-term follow-up compared to no treatment/waiting list controls. Finally, multidisciplinary treatment was found to reduce pain intensity and disability at short-term follow-up compared to no treatment/waiting list controls. Overall, the level of evidence was low. Evidence from randomized controlled trials suggests there is low quality evidence for the effectiveness of behavioral therapy compared to no treatment; moderate evidence for the effectiveness of a multidisciplinary treatment compared to no treatment and other active treatments at reducing pain at short-term in the treatment of *chronic* low back pain. Based on the heterogeneity of the populations, interventions, and comparison groups, there is insufficient data to draw firm conclusion on the clinical effect of back schools, low-level laser therapy, patient education, massage, traction, superficial heat/cold, and lumbar supports for chronic LBP.
- A 1997 Randomized trial compared a 10 week specific exercise program for spinal stabilization to 'care as usual' for chronic back pain sufferers with radiographic of spondylolysis or spondylolisthesis.[62] Pain and functional disability scores were lower in the exercise group compared to controls.
- A 1999 randomized controlled trial of progressive exercise compared to usual primary care management reported outcomes of 187 patients with mechanical back pain of 4 weeks to 6 months duration. Patients' preferences for type of management were also elicited independently of randomization.[63] Significantly greater improvement in disability questionnaire scores was reported at 6 months and 1 year for the exercise group. The intervention group also showed significantly greater improvement in the Aberdeen back pain scale at one year and reported only 378 days off work compared with 607 in the control group. The intervention group used fewer healthcare resources resulting in lower costs compared to usual care. Outcome was not associated with patients' preferences.
- In a trial of a graded exposure-based active physical therapy, three physical therapists completed an introductory workshop and provided patient treatment in the form of individual therapies.[64] Sixteen participants 65 years or older with CLBP and perceived physical limitations were recruited. Four patient-reported outcome measures and semi-structured interviews revealed a significant increase in physical ability after treatment. There was a statistically significant decrease in pain intensity, catastrophizing, and avoidance beliefs. The interviews revealed good acceptance and satisfaction of the treatment by the patients and physical therapists.

Patient Education

Patient education refers to counseling or teaching patients about specific issues that impact their recovery. Straightforward common sense education and communication about a condition, the patient's role in recovery, and the like can be considered routine in primary patient care. Attending providers typically include education for issues such as wound care, diet, or blood pressure in a variety of ways including handouts, dedicated office visit time, and/or a referral or recommendation for more focused training. Many psychosocial determinants can be addressed similarly with basic information sharing, but some individuals may require more dedicated effort and interaction. For situations involving greater complexity or severity, referral for a more formal, structured approach (e.g., activity coaching) may be warranted.

Psychoeducation is a term traditionally used to refer to systematic courses or sessions for MH conditions such as clinical depression, personality disorders, eating disorders, schizophrenia and the like.[65] Patient education approaches can also involve close friends or family members to facilitate the worker's support system. [66] The topics identified here typically may be addressed within usual office visits. However, additional attention, perhaps a dedicated office visit, may be useful for individuals with a particularly challenging PDIR, or a significant number of them. Various brief educational interventions for psychosocial issues such as fear of work activities or pain, catastrophizing, motivation to be active, coping, medication use/adherence have been shown to be of value. This section summarizes common areas for which patient education may be useful and simple ideas for addressing them.

A free, useful patient guide for self- management strategies for dealing with pain is downloadable from the UK National Health Service.

The nature of workers' compensation benefits – Injured workers may have unrealistic expectations regarding the scope and nature of benefits delivered by the workers' compensation system.

- Explain that workers' compensation exists for the purpose of returning injured workers to work.
- Explain the difference between health insurance (which is concerned about overall health) and industrial insurance (which by law is limited only to recovery from a work injury or exposure).
- Explain that the workers' compensation system is owned both by employers and workers. The medical/legal nature of the system means allowable benefits can be subject to different guidelines, authorization processes and administrative processes and delays, not typical in usual health care.

Positive workplace connection – When work injuries occur, it is the attending provider who everyone looks to for determining when and how return to work occurs. The attitudes, expectations, and procedures an AP adopts sets the tone early for a safe and effective return to work.

- Emphasize that a successful clinical outcome from a work injury includes returning to their job.
- The employer is a partner in the process. When work restrictions are given, explain that you will work closely with the patient and their employer to address needed changes to work schedule and activities in order to achieve a safe and sustainable return to work.
- Make sure both the patient and employer receive a copy of the Activity Prescription Form (APF) when restrictions are given, and go over the talking points on the back of the form with your patient.
- Convey that L&I resources such as the Stay at Work Program, Early Return to Work, and health services coordinators may be available to assist with return to work.
- Documenting what activities can be done on an APF, contacting the employer about appropriate job modifications, and connecting with a claim manager or health services coordinator to get assistance to an employer or worker is critical if prolonged time off work appears eminent.

Understanding their injury and pain – After an injury occurs, working through pain may result in a conundrum that pushing through pain may increase it; however avoiding activity also leads to more pain and disability. Without the right perspective, pain can become the central focus of one's experience in an injury; however, keeping focused on function is actually a better strategy. Pain comes and goes, and activity has been shown to not only be a better indicator of recovery, it actually helps reduce pain.

- Explain what pain is (e.g., initially the brain's response to damage or irritation to nerve endings, aka, nociceptive stimulus).
- Explain what pain is not (e.g., it does not equate to damage or harm). Athletes experience pain during rigorous exercise. Putting a hot paper on your tongue is very painful; yet neither damages tissue.
- Explain why sometimes pain becomes chronic (e.g., the nervous system may develop pathways that make the brain think the endings are still irritated, aka, sensitization).
- Explain that many things can increase the experience of pain (e.g., stress, anxiety) or decrease it (e.g., activity, focusing on other things).
- Ask about pain interference (not level): "On a scale of 0-10 how much is your pain interfering with *(an activity important to the patient)?"*

Overcoming unrealistic fear – When one is hurting, the last thing one wants to do is make it worse. Yet the very thing one needs to do to recover (e.g., stay active, exercise the injured area) may involve discomfort. Its normal (and life-saving) to avoid things that cause pain; however unrealistic fear of pain or

activity leads to avoiding what helps. Simple knowledge and incrementally increasing activity works for most people. Learning to have control over when intolerable pain is experienced also helps. Fear that is at such a level that it stops one from doing things, may reflect catastrophizing. In such cases, go deeper into what the issues are:

- Ask your patient about what activities they are concerned about, especially things they would do at work.
- Think through the worst thing that could possibly happen if one does something that causes pain. Think through what the most likely thing that happens will be.
- Take baby steps to gradually increase activity your patient is worried about.
- Determine if the worker expects they will have a normal recovery ("do you think everything is going to be OK in a couple months?") Assure the patient understands normal recovery and that nearly all musculoskeletal conditions get better.
- Exposure to the activity to see that pain can be prevented, controlled, or tolerated helps overcome unfounded fear.
- When such simple measures are not enough more systematic programs may be in order (Activity Coaching, CBT).

Pacing oneself **–** Pacing is a strategy for engaging in the right amount of activity (time and intensity) in order to prevent pain flare-ups, or insidious stimulation of a later onset (e.g. doing too much one day and paying for it the next). Pacing involves advance planning for specific activities or tasks, developing work-arounds (timing of breaks, limiting magnitude or weight involved), and adjusting the frequency and/or duration of work. A pacing plan should set reasonable activity level goals – not reactive pain level-based decision making. It should incrementally increase activity, slowly and safely. Pacing for chronic pain might look like this (acute injuries should resolve faster but similar principles apply if functional improvement is stalled):

- Determine the activity baseline: write down the time, distance, or repetitions an activity can be done without a pain increase that lasts more than a half hour. Do this about three times over 3 days and get an average and reduce the amount by 20% to set the baseline. For example if it takes 10 minutes standing doing dishes to initiate a pain increase that lasts under a half hour, set the baseline at 8 minutes.
- Repeat the task daily for several days to a week at the baseline level, then increase the time doing dishes by 10% (a little less than a minute).
- Pacing assures one stops before pain becomes unmanageable and promotes a regular amount of activity each day.
- Many PDIR issues may benefit from incrementally increasing activity which helps address fear avoidance behavior, catastrophic thinking, and recovery expectations, among others. Using an activity diary can help track progress to inform both the patient and the AP.
- A pacing guide from the Western Australia Department of Health with helpful tips designed for chronic pain can be downloaded here: http://painhealth.csse.uwa.edu.au/resources/painHEALTH-pacing-guide-worksheet.pdf

Problem solving **–** Sometimes focusing on a problem and its ramifications gets in the way of doing anything about it. Some people may need guidance in how to work through problems that may arise during their recovery. If there are compliance problems, resistance to increasing or trying different activities, frustration, or repeated set-backs in the picture, inadequate problem solving skills may be a contributor. Formal problem-solving skills training strategies have been developed for parents of children with serious illness (e.g., cancer) [67] and various approaches for self-help and child development abound. Some evidence suggests better problem solving skills is associated with reduced stress.[68] As a stand-alone, the impact of problem solving skill development is difficult to distinguish from effects of other patient education, goal setting, or other coping skills.

Generally speaking, problem solving represents a systematic approach to identify what the problem that needs addressing is and making written goals for overcoming the problem. Next, written steps to achieve the goal(s) should follow. In addition, identification of multiple alternatives to achieve a goal can help to explore how to decide what to do. Most approaches also incorporate considering what will happen if one takes the steps to achieve the goal or fails to do so. This kind of framework can be useful for remaining compliant with something such as an activity program, but learning to engage in the framework itself can be a self-help strategy for things like pain flare-up, uncomplicated disagreements with co-workers and numerous life challenges.

Related/similar approaches: Problem solving skills training, problem-solving therapy.

Patient education strategies:

- Write down the problem needing to be solved (e.g., just can't find time to take walks).
- Write down what a specific the goal (or goals) might be to overcome the problem (e.g., free up 15 minutes in the morning and evening to walk).
- Write down what steps would be required to accomplish it (e.g., select a set time every day to walk before work; set alarm clock for 15 minutes earlier; start the coffee maker to be ready and be a reward when finishing the walk; complete walking around the block twice before taking the morning shower and having coffee).
- Write down alternatives to the initial group of steps (e.g., schedule morning break on outlook calendar at work; find co-worker to take walking break with me).
- What will happen if goal is achieved (muscles will be looser eventually easing low back pain, fresh air, consistency over time burns calories and may

lose a few pounds) and if it is not (pain not as likely to go away, tightness will persist, my doctor will keep pestering me, it will be harder to lose weight).

Goal setting – Goal-setting can be a promising tool for improving psychosocial outcomes with disabled individuals undergoing rehabilitation.[69] However, the most commonly reported goals patients with conditions such as back pain are concerned with relate to improving physical activity.[70] Key for successful goal setting is relevance and putting them in easily referenceable writing. Goals need to be negotiated with the patient; they must have ownership in them. [71]

Patient education strategies:

- Develop "***SMART"*** goals: **S**ustainable; **M**eaningful; **A**chievable; **R**ealistic; and **T**imed.
- Break tasks and activities into small, achievable components and build on them. For example, a first step in increasing activity might include varying positions and postures regularly between sitting, standing, and walking for the first day, then add a few minutes of walking the next.
- Place written goals in an easily viewed location (e.g., the refrigerator, workstation monitor screen)

Coping with emotions and mindfulness **-** Mindfulness can be defined as awareness and nonjudgmental acceptance of one's moment to moment experience. A number of psychological techniques, systems and approaches have been developed for common distresses such as rumination, anxiety, worry, fear, anger, etc. which may involve maladaptive tendencies to avoid, suppress, or over-engage with one's distressing thoughts and emotions.[72-74] Cognitive behavioral therapy (CBT) approaches have demonstrated effectiveness in addressing maladaptive behaviors associated with the development of chronic pain.[75] Mindfulness approaches which include acceptance and commitment therapy (ACT), mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT) take a different approach. Whereas CBT strives to identify and change maladaptive behavior and dysfunctional beliefs, mindfulness approaches tend to address avoidance behavior. [76] Of the mindfulness approaches, ACT, appears to have the greatest effectiveness, comparable to CBT.[77]

Related/similar approaches: Mindfulness-based intervention, meditation, thoughtfulness, awareness, acceptance.

Patient education strategies:

- Mindfulness is simply just paying attention – on purpose, in the moment, and without judging anything.
- Stay "in the moment." Simply be aware of what you are feeling, doing, your posture, your thoughts, etc. on a moment to moment basis.
- Pay attention to what is going on when pain flares up (e.g., feeling stressed about something, getting tense, or upset).
- Dedicate quiet time during the day to reflect on what you are thinking, feeling, what your muscles are doing (what is tense, what is relaxed).
- The goals of mindfulness are twofold: Improving ones attention to the present moment and developing an orientation that is characterized by curiosity, openness, and acceptance. [78]
- More formal meditation strategies may also be utilized.

Relevant studies related to patient education activities:

Work

- A Scandinavian randomized study of a case manager administered brief psychoeducation contacts with 430 workers on sick leave determined to be at risk of mental health issues did not increase 6 month RTW rate compared to the control group, and during the first 3 months workers in the intervention group had a significantly higher risk of not fully returning to work.[79] Workers who attended at least 4 of 6 psychoeducational sessions, returned to work at a significantly slower rate at both 3 and 6 months. The intervention did not impact psychological symptoms, or mental health quality of life, but did result in improved locus of control scores.

Fear

- Sixty consecutive patients undergoing coronary artery bypass grafting (CABG) the first time were randomized into two groups: The study group received a brief psychoeducation group intervention to address fear and anxiety combined with routine care, compared to routine care alone. [80] Psychoeducation consisted of a discussion of fear and anxiety in a psychotherapeutic atmosphere and relaxation techniques. Fear was scored with the Bypass Grafting Fear Scale (BGFS) and anxiety was scored with the Spielberger State Inventory (STAI) Questionnaire. Of the 29 patients treated with psychoeducation, the mean (SD) fear score decreased from 4.6 (1.7) at baseline to 2.8 (1.2) before the operation ($p < .001$). In the 31 patients who received routine care, there was a nonsignificant trend from 3.7 (1.9) to 4.1 (2.1) ($p > .05$). The mean difference in fear score before the operation was significantly lower in the psychoeducation group than the routine care group (mean difference -1.3; 95% CI, -2.1, -.2; $p < .05$). There were no differences in anxiety scores before the operation between the psychoeducation and routine care groups. In this population, patients undergoing CABG and adding psychoeducation to routine care had a significant positive effect on fear but not on anxiety scores.
- A systematic Cochrane review of psychotherapy interventions for panic disorder with or without acrophobia included 54 studies of psychotherapy

interventions (psychoeducation (PE), supportive psychotherapy (SP), physiological therapies (PT), behavior therapy (BT), cognitive therapy (CT), cognitive behavior therapy (CBT), third-wave CBT (3W) and psychodynamic therapies (PD), including both individual and group formats).[80] All studies were considered to be of low quality with the most work addressing CBT. No randomized trials of psychoeducation for panic disorder were identified. There was no high-quality, unequivocal evidence to support one psychological therapy over the others for the treatment of panic disorder with or without agoraphobia in adults. However, the results show that CBT was often superior to other therapies, although the effect size was small and the level of precision was often insufficient or clinically irrelevant. In the only two studies available that explored PD, this treatment showed promising results, although further research is needed in order to better explore the relative efficacy of PD with respect to CBT. Furthermore, PD appeared to be the best tolerated (in terms of ST-dropouts) among psychological treatments.

- The relationship of recovery expectations and depression as factors in returning to work (RTW) following a work-related musculoskeletal injury was the subject of a 2015 study.[81] Patients (n=109) recruited from primary care physiotherapy clinics completed measures of pain severity, depression and recovery expectancies. RTW status was assessed by telephone interview 1 year after the initial assessment. More severe depressive symptoms and lower recovery expectancies were associated with a lower probability of RTW. Logistic regression analyses indicated that recovery expectancies completely mediated the relation between depression and RTW status at 1-year suggesting that interventions specifically targeting recovery expectancies in individuals with WRMDs and depressive symptoms might improve RTW outcomes.

Mindfulness

- A meta-analysis of 12 randomized controlled trials (RCTs) of mindfulness-based interventions (MBIs), where participants met diagnostic criteria for a current episode of an anxiety or depressive disorder, was conducted to determine how the cognitive, affective, and motivational features of depression and anxiety might render MBIs ineffective in people currently experiencing depressive symptoms.[82] There were significant post-intervention between-group benefits of MBIs relative to control conditions on primary symptom severity (Hedges g=−0.59, 95% CI=−0.12 to −1.06). Effects were demonstrated for depressive symptom severity (Hedges g=−0.73, 95% CI=−0.09 to −1.36), but not for anxiety symptom severity (Hedges g=−0.55, 95% CI=0.09 to −1.18), for RCTs with an inactive control (Hedges g=−1.03, 95% CI=−0.40 to −1.66), but not where there was an active control (Hedges g=0.03, 95% CI=0.54 to −0.48) and effects were found for MBCT (Hedges g=−0.39, 95% CI=−0.15 to −0.63) but not for MBSR (Hedges g=−0.75, 95% CI=0.31 to −1.81). Effects of MBIs on primary symptom severity were found for people with a current depressive disorder and it is recommended that MBIs might be considered as an intervention for this population.
- A meta-analysis of 13 RCTs [83] related to the efficacy of any form of mindfulness-based therapy (MBT) in treating somatization disorders (e.g., fibromyalgia, chronic fatigue, irritable bowel syndrome) and focusing on the effects of BMT on pain, symptom severity, quality of life, depression, and anxiety was performed. Power was limited, but indicated a small to moderate positive effect of MBT (compared to wait-list or support group controls) in reducing pain (SMD =−0.21, 95% CI: −0.37, −0.03; p<0.05), symptom severity (SMD =−0.40, 95% CI: −0.54, −0.26; p<0.001), depression (SMD =−0.23, 95% CI: −0.40, −0.07, p<0.01), and anxiety (SMD =−0.20, 95% CI: −0.42, 0.02, p=0.07) associated with somatization disorders, and improving quality of life (SMD =0.39, 95% CI: 0.19, 0.59; p<0.001) in patients with this disorder. Subgroup analyses indicated that the efficacy of MBT was most consistent for irritable bowel syndrome (p<0.001 for pain, symptom severity, and quality of life), and that mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MCBT) were more effective than eclectic/unspecified MBT.
- A systematic review and meta-analysis of systematic reviews of RCTs (including 187 published reviews yielded 23 reports that met inclusion criteria covering 115 unique RCTs and 8,683 unique patients) using the standardized mindfulness-based programs, Mindfulness-Based Stress Reduction (MBSR) and Mindfulness Based Cognitive Therapy (MBCT) was performed addressing multiple physical and mental health conditions.[84] Compared to wait list control and compared to treatment as usual, MBSR and MBCT significantly improved depressive symptoms (d=0.37; 95%CI 0.28 to 0.45, based on 5 reviews, N=2814), anxiety (d=0.49; 95%CI 0.37 to 0.61, based on 4 reviews, N=2525), stress (d=0.51; 95%CI 0.36 to 0.67, based on 2 reviews, N=1570), quality of life (d=0.39; 95%CI 0.08 to 0.70, based on 2 reviews, N=511) and physical functioning (d=0.27; 95%CI 0.12 to 0.42, based on 3 reviews, N=1015). Limitations include heterogeneity within patient categories, risk of publication bias and limited long-term follow-up in several studies. Structured programs (MBSR and MBCT) appear useful to alleviate symptoms, both mental and physical, in the adjunct treatment of cancer, cardiovascular disease, chronic pain, depression, and anxiety disorders.
- A 2013 cross-sectional study was conducted to examine the influence of mindfulness and general psychological acceptance on pain-related catastrophizing in patients with chronic pain.[85] A total of 87 chronic pain patients from an academic outpatient pain center completed surveys on general psychological acceptance (measured with the AAQ-II) which predicts pain-related catastrophizing, independent of gender, age and pain intensity. Mindfulness (measured with the MAAS) did not predict levels of pain-related catastrophizing. Acceptance of psychological experiences outside of pain itself was related to catastrophizing. The authors concluded that acceptance seems to play a role in the pain experience and should be part of the treatment of chronic pain, and the focus of ACT treatment of chronic pain may be aimed at acceptance of unwanted experiences in general. Mindfulness in the sense of ‘‘acting with awareness’’ was not related to catastrophizing.
- A systematic review and meta-analysis controlled and non-controlled studies of acceptance-based interventions reporting effects on mental and physical health of pain patients found that mindfulness-based stress reduction programs and acceptance and commitment therapy are not superior to cognitive behavioral therapy but can be good alternatives.[86] An effect size on pain of 0.37 was found for the controlled studies, and the effect on

depression was 0.32. The quality of the studies was not found to moderate the effects of acceptance-based interventions. Overall, the authors concluded that acceptance-based therapies have small to medium effects on physical and mental health in chronic pain patients, and these effects are comparable to those of cognitive behavioral therapy.

- In a Meta-analysis of 25 RCTs of patients with chronic pain, acceptance- and mindfulness-based interventions were compared to the waitlist, (medical) treatment-as-usual, and education or support control groups.[77] Effect sizes ranged from small (on all outcome measures except anxiety and pain interference) to moderate (on anxiety and pain interference) at post-treatment and from small (on pain intensity and disability) to large (on pain interference) at follow-up. ACT showed significantly higher effects on depression and anxiety than MBSR and MBCT. The authors concluded that current acceptance- and mindfulness-based interventions, while not superior to traditional cognitive behavioral treatments, can be good alternatives.
- A systematic review of how mindfulness is used in physical rehabilitation and its implications for occupational therapy practice was conducted. [87] The literature included suggested that mindfulness interventions are helpful for patients with musculoskeletal and chronic pain disorders and demonstrate trends toward outcome improvements for patients with neurocognitive and neuromotor disorders. Only 2 studies included an occupational therapist as the primary mindfulness provider, but all mindfulness interventions in the selected studies fit within the occupational therapy scope of practice according to the American Occupational Therapy Association's Occupational Therapy Practice Framework: *Domain and Process*.

Problem Solving

- A Cochrane review of the effects of interventions facilitating RTW for workers with acute or chronic adjustment disorders found nine studies reporting on 10 psychological interventions and one combined intervention.[88] Overall, the authors found moderate-quality evidence that cognitive behavioral therapy (CBT) did not significantly reduce time until partial RTW and low-quality evidence that it did not significantly reduce time to full RTW compared with no treatment. Moderate-quality evidence suggested that problem-solving therapy (PST) significantly enhanced partial RTW at one-year follow-up compared to non-guideline based care but did not significantly enhance time to full RTW at one-year follow-up.

Goal Setting

- A prospective study determined the relation between social problem-solving skills and psychological distress in college students.[68] Analysis showed that general problem-solving ability was negatively related to later stress, suggesting that perceived control can be effective in preventing or reducing stress.

Self-Efficacy

The extent to which one has ability to complete tasks and reach goals has been termed “self-efficacy.” [89, 90] The concept centers on ideas such as belief in oneself, persistence, setting and achieving goals. It is distinct from confidence or self-esteem in that self-efficacy includes both an affirmation of one’s capability for a particular task or challenge, and a strong belief in that capability (as opposed to a more general sense of self-worth or certainty). As a psychosocial approach, relevant intervention domains include a patient’s engagement in their own recovery, self-management in coping with life circumstances, or successfully completing prescribed tasks (e.g., following an activity diary, or writing down ones feelings to better focus and examine them). There is debate regarding the degree to which self-efficacy is a learned behavior versus a genetic trait.[91] It is reasonable nonetheless for attending providers to encourage, and even set expectations for being active participants with their treatment, and that they can achieve functional improvement goals including returning to their jobs. Studies suggest that individuals who demonstrate self-efficacy have higher levels of job and life satisfaction,[92, 93] but direct impact on clinical outcomes is not available. Expressive writing does appear to improve attitudes, feelings of depression, and general satisfaction,[94] but no direct benefit to clinical outcomes (such as pain) has been demonstrated in medically diagnosed conditions.[95, 96] Resilience training is a more systematic goal-directed approach for developing “mental toughness” to withstand and rebound from difficult and traumatic events. It is frequently utilized as a training program in military and executive business settings. [97, 98] Some key elements from resiliency training may be applicable for attending physicians. Numerous stand-alone skill development programs abound, and some specialists incorporate resilience into psychological and coping interventions.

Related/similar approaches: Emotional stability, locus of control, resilience/resiliency.

Self-efficacy strategies:

- ***Engage patient in their own recovery***
  - Assure the worker understands the roles various parties (e.g., employer, claim manager) may also have in the recovery process.
  - Help the worker learn to identify the optimal rate for their own return to physical function that may have been limited due to their injury.
  - Negotiate and obtain agreement about the patient’s role and responsibilities in their own care.
  - Give specific assignments and tasks such as activity diaries and educational information that you review at subsequent visits.
  - Emphasize the importance you place on their engagement in order to recover as safely, fully, and expeditiously as possible.
- ***Explore self-management for coping with life circumstances***
  - Understand what to do when becoming stressed.

    - Identify appropriate self-care strategies.
    - Assure they know how and when to get assistance or seek interim care.
- ***Consider expressive writing***
    - Regularly write down their thoughts, feelings and activities when they feeling bad, and when they are not in pain.
    - Serves as a tool for people to monitor themselves in a systematic way. This can help elucidate how one's thoughts impact the experience of pain and facilitate strategies to prevent exacerbations. [99]
- ***Consider resilience building strategies***
    - Recognize change as a central part of all life experience and that crises that happen are not insurmountable.
    - Nurture a positive self-image using realistic goals and achieving them, even small accomplishments, to build confidence.
    - Maintain perspective – choose to view painful and stressful events in a long term perspective; visualize optimistic hopes for the future rather than worrying about current fears.
    - Nurturing supportive relationships may be helpful. On-line self-help, support groups, and other publications abound for a variety of life situations and may be useful to explore before referring to a mental health specialist

Relevant self-efficacy studies:

- A 2001 systematic review of psychology literature identified three quantitative studies that reported strong correlations between self-esteem, generalized self-efficacy, locus of control, and emotional with high job satisfaction.[93] The same review reported on additional lesser quality studies indicating the correlation may also exist with job performance, however inconsistent results diminished robustness of the relationship, particularly related to self-esteem.
- A meta-analysis of 114 studies conducted before 1998 involving over 21,00 subjects reported a significant weighted correlation between self-efficacy approaches and work-related performance.[92]
- A 2008 systematic review of 10 studies assessing a variety of approaches to enhance self-efficacy (tailored letters to intensive group-based interactions) among addicted users of tobacco, alcohol and illicit drugs indicated that self-efficacy measures were significantly improved.[100] Two studies that reported on addiction behavior change reported statistically significant improvement, however the design did not establish that the self-efficacy interventions were responsible for the improvement.
- A 2008 narrative review and discussion paper reported that self-efficacy is strongly associated with the amount of physical activity undertaken.[101] Some trials supported the view that incorporating self-efficacy strategies into the treatment plans aimed at increasing physical activity should be considered.
- A comparative trial of expressive writing among college students with both elevated and low depressive symptoms reported that at 6 months, significantly lower self-reported depression symptoms were found in the expressive writing group. [94]
- Expressive writing (using a self-administered standardized video training for subjects) was not shown to be helpful for pain or coping in a randomized trial of 373 rheumatoid arthritis patients.[95]
- In a 1994 comparative study of 63 recently unemployed professionals, those assigned to write about thoughts/emotions surrounding job loss were reemployed more quickly than those that did not. [102]
- A 2004 report addressed the use of videos viewed at home for using expressive writing to help work through rheumatoid arthritis pain.[95] A case series of 373 patients in a community practice reported that 79% agreed to take the videos home and 49% reported following the protocols described. However, no difference in pre-post treatment activity scales (SF-36 and Disease Activity Rating) were reported, however, the study was limited by many pre-treatment differences between participants.
- An older report explored the use of expressive writing on 63 recently unemployed professionals.[102] Those assigned to write about their emotions and thoughts regarding their job loss appeared to have better attitudes about their previous jobs and increased motivation to seek new employment than those who were assigned to write about non-related topics or not write at all.
- A 2006 meta-analysis identified 30 randomized trials involving 2,294 subjects reporting on health care utilization in people using expressive writing version unrelated writing versus no writing.[96] Three homogenous groups were identified (healthy, medical conditions, and psychological conditions). Downstream health care utilization was lower with healthy individuals, but not in samples having stress exposure or diagnosed medical conditions.
- A 2013 Norwegian population-based study of 1394 adolescent twin pairs assessed genetic and environmental factors related to self-efficacy (Children's Perceived Self-efficacy Scale and subject/parent interviews) employing 12 items from academic, social, and self-regulatory domains. [91] The study indicated that 75% of variation in self-efficacy correlated with genetic factors as opposed 25% being related to environmental factors, implications being that learning self-efficacy may be a bigger challenge than conventionally believed. The report probably has more implications for further research than it does on deciding about interventions to improve self-efficacy.

Pain Coping

"Pain coping" refers to self-management strategies to prevent and deal with pain when it happens. As a PDIR "intervention," it is not a specific technique, rather an individualized plan for a worker's responses to inevitable flare-ups and bad days. Pain coping may entail other PDIRs such as pacing, mindfulness, or relaxation. A patient's understanding of what pain and chronic pain are can be helpful for them to figure out what to do when it happens. Most of the work in this area is geared toward chronic pain; however, the process of proactively strategizing to prevent flare-ups is a skill that should be facilitated with acute injuries, especially when PDIRs have been identified. The ability to be able to work through a flare-up can be a powerful psychological aid to recovery.

Pain is the symptom most people, including providers and society generally, tend to focus on. However, attention to the pain experience and its severity may foster unjustified avoidance behavior and actually contribute to reinforcing the pain experience. Focusing on functioning through pain and functioning in ways that prevent flare-ups is a preferred strategy. While pain education explains what pain is and crosses over into overcoming and managing pain, pain coping reflects a more detailed, individualized effort for the worker who is having trouble dealing with pain. Some pain coping techniques may be best learned with the help of a professional. It typically takes practice in order for pain coping techniques to be effective. It is advisable to allow about 30 minutes 3 times a week for working on pain coping strategies. Relaxation and pain control improves with regular practice.

Related/similar approaches: Pacing, relaxation, activity modification.

Pain coping strategies:

- Involve the patient in assessing their pain. Have them ask "What kind of pain am I having?" and "What can make it better?"
- Reinforce the message that the sensation of pain does not mean their body or injured area is being damaged. Consider the example of placing a jalapeño pepper on your tongue.
- Encourage the patient to think about what they can do when pain is present; ask them about what they would like to do that pain is inhibiting them from accomplishing.
- The pain experience can diminish as one becomes conditioned to new activities – athletes experience pain all the time.
- Plan ahead regarding activities and postures that might increase pain; think about what can be done to make adjustment if pain comes on (altering positions, size of loads, available support resources such as a chair, foot rest, side table, a helper).
- Always start tasks and activities, especially new ones, with "baby steps".
- For flare-ups, consider trying relaxation techniques first to work through the pain, then make readjustments to activities and situations that may have triggered it.
- Pain coping strategies include:
    - **Relaxation training** – Concentration with slow, deep breathing to release tension from muscles and relieve pain. Focus on relaxing one body part and gradually extend to others (first relax the shoulder, then the upper arm, elbow, forearm, etc.)
    - **Imagery & distraction** – Imagery involves concentrating on mental pictures (visualize your back melting into the bed). Picture a favorite pleasant scene or events where you were relaxed and pain free (distraction) to help reduce a pain episode. Another imagery strategy involve imagining the pain as a metaphorical thing such as a glaring light bulb, then imagine slowly turning the dimmer switch down. Another image might be to imagine your painful body part sitting across the room on a chair, separate from your mind, then tell it to stay there.
    - **Transferring focus** – Concentrate on a part of the body that is not hurting and imagine it experiencing a different pleasant sensation (e.g., imagine your hand warming up) to take your mind of the area that hurts. Then imagine the warm hand being placed on the painful area and transferring the new sensation to replace the painful one.
    - **Counting** – Silently count something (breaths, leaves on a plant, floor tiles, etc.)

Relevant pain coping studies:

- A randomized trial of the effects of a self-management program for complaints of the arm, neck, or shoulder was examined in a population of employees at a university in the Netherlands. The program consisted of six group sessions combined with an eHealth module. Most participants appreciated the diversity of the program and benefited from the interaction with their peers. The eHealth module, although not used by everyone, was generally experienced as positive, especially the section with the physical exercises. Participants obtained more insight into their complaints and increased awareness, which contributed to the acceptance of and coping with the complaints. There was also criticism about the content of the program and the lack of a follow-up session. Results of questionnaires showed that participants had a high level of satisfaction. In general, the intervention fitted the needs of employees. Participants obtained more knowledge and insight into their complaints, as well as increased awareness; all this contributed to a behavioral change and improved coping. Many participants made changes at work and during their leisure time, whereas some felt that continuing their 'changed' behavior would be a challenge.[103]
- A series of 72 patients with chronic musculoskeletal pain underwent a preliminary, uncontrolled test of a novel psychological attribution and emotional awareness and expression therapy that involves an initial individual consultation followed by 4 group sessions. Participants were assessed at baseline, post-treatment, and 6-month follow-up. Participation and satisfaction were high and attrition was low, and intent-to-treat analyses found

significant improvements in hypothesized change processes: psychological attributions for pain, emotional awareness, emotional approach coping, and alexithymia. Pain, interference, depression, and distress showed large effect size improvements at post-treatment, which were maintained or even enhanced at 6 months. Approximately two-thirds of the patients improved at least 30% in pain and other outcomes, and one-third of the patients improved 70%. Changes in attribution and emotional processes predicted outcomes. Higher baseline depressive symptoms predicted greater improvements, and outcomes were comparable for patients with widespread vs. localized pain.[104]

Additional Support Systems

Although factors beyond a patient's clinical (mental and physical) condition are not typically considered as a focus of care, all providers are aware of how life can get in the way of a patient's recovery. With work injuries, many such things can impact their treatment adherence, level of anxiety, sense of hopefulness, and desire to get better. A little attention to L&I and other public and/or community resources to help address non-clinical issues that interfere with recovery may go a long way to help speed recovery and reduce an AP's administrative burden. Common issues include dealing with reduced income when off work, addressing transportation needs, finding help with child/elder care, among others.

Non-clinical assistance strategies:

- Consider making an office flier with public transportation information (bus routes, regional transit numbers/websites, even keeping a supply of schedules).
- Make L&I worker resources available (websites, brochures, contact info).
- Identify local public assistance resources (which vary by community).
- Project Help is a free program collaboratively administered by the L&I, the Washington State Labor Council. It is available to anyone (including workers, providers, and employers) needing information on workers' compensation – laws, benefits, resources, or processes. It is particularly useful for those unfamiliar with the system and its complexities, including one-on-one claim guidance for injured workers. http://www.ProjectHelpWA.com

Relaxation Training and Techniques

Relaxation training refers to any method, process, procedure, or activity that helps a person to relax; to attain a state of increased calmness; or otherwise reduce levels of pain, anxiety, stress or anger. Response to stress takes many forms (e.g. becoming overwhelmed, anxious, or depressed). Relaxation techniques are often employed as one element of a wider stress management program and can decrease muscle tension, lower the blood pressure and slow heart and breathing rates, among other health benefits. Learning how to relax requires practice for many people and 'mastering' what works best in ideal settings (e.g., at home) might best be achieved before figuring out how to accommodate relaxation at work.

Relaxation approaches generally can be categorized as:

- Breathing techniques (e.g., slow, deep, rhythmic breathing).
- Muscle tension and movement techniques (e.g., contract/relax, progressive muscle relaxation, t'ai chi, yoga, stretching exercise, massage).
- Guided imagery/visualization techniques (e.g., thinking about a pleasant location or experience, imagining a tense body area melting).
- Sensation-related (e.g., biofeedback, concentration on what a body area is experiencing and what thoughts change it).
- Meditation techniques (e.g., mindfulness, transcendental meditation, spiritual approaches).

Self-help resources for relaxation are widely available in books and online. There are also community-based programs. Different people gravitate to different techniques, so it may be helpful to encourage a worker to try different techniques to find which approach works best for them. There may also be many community-based resources for relaxation, meditation, yoga and other self-help options.

Related/similar approaches: Progressive muscle relaxation, yoga, deep breathing (e.g., Pranayamahave), movement based relaxation (e.g. Qigong, Taiji, T'ai chi), biofeedback, meditation, visualization.

Relaxation strategies:

- Find a comfortable position or posture, ideally in a quiet environment.
- Slow, deep, rhythmic breathing can be very helpful for total body relaxation.
- Systematically relax one body area and gradually move to adjacent ones.
- Stretching and aerobic exercise is very helpful for reducing muscle tension.
- Imagery and visualization of things associated with relaxation (pleasant surroundings, a favorite tune) facilitates relaxation for many people.
- Brief 1-2 minute progressive muscle relaxation breaks at work reduce stress, but adequate practice outside of work is needed.

Relevant relaxation training studies:

- A systematic Cochrane review evaluated work and person directed intervention compared to alternative approaches or no treatment for preventing stress in healthcare workers.[105] A total of 58 studies involving 7,188 participants were identified addressing interventions categorized as cognitive-behavioral training (CBT) (n = 14), mental and physical relaxation (n = 21), combined CBT and relaxation (n = 6) and organizational interventions (n = 20). Overall, there is low-quality evidence that CBT, mental, and physical relaxation reduce stress more than no intervention but not more than alternative interventions. There is also low-quality evidence that changing work schedules may lead to a reduction of stress. Other organizational interventions have no effect on stress levels.
- A systematic review and meta-analysis on effectiveness of mind-body practices for patients with diagnosed cardiac disease identified 11 RCTs with an overall low quality.[106] The studies evaluated mindfulness-based stress reduction, transcendental meditation, progressive muscle relaxation and stress management. Pooled analyses revealed effect sizes of 0.45 (95%CI 0.20-0.72) for physical quality of life, 0.68 (95%CI 0.10-1.26) for mental quality of life, 0.61 (95%CI 0.23-0.99) for depression, 0.52 (95%CI 0.26-0.78) for anxiety, 0.48 (95%CI 0.27-0.69) for systolic blood pressure and 0.36 (95%CI 0.15-0.57) for diastolic blood pressure. Overall, mind-body practices appear to have encouraging results for patients with cardiac disease.
- A systematic review and meta-analysis focusing on patient-relevant outcomes and blood pressure assessed stress-reduction techniques in adults with essential hypertension.[107] Seventeen RCTs analyzing different stress-reduction techniques such as biofeedback, relaxation or combined interventions were identified. Data were not reported for most of the patient-relevant outcomes, and meta-analyses could only be used to evaluate effects on blood pressure. The data indicated stress-reduction techniques used for at least 24 weeks appeared to facilitate a blood pressure-lowering effect in patients with essential hypertension, but should be interpreted with caution because of major methodological limitations. Benefits of specific stress-reduction techniques in hypertensive patients could not be derived from the available studies.
- A 2008 study of employees receiving training for on-the job relaxation training for stress compared pre and post self-reported stress levels (100 point anchored scale) before and after each session as well practice frequency between sessions.[108] Two groups utilized different relaxation approaches; Group 1 (n=104) received 3 training sessions for progressive muscle relaxation of 7, 15, or 25 minutes durations. Group 2 (n=120) received 2 sessions of either 15 minute progressive muscle relaxation or four 1-2 breaks for mini-relaxation. Both groups reported meaningful stress reduction scores with 25 minute session having the largest change. However shorter sessions also reduced stress significantly and more practice between trainings correlated with greater reductions. Short mini-relaxation breaks are more likely to be implemented and used in work settings, but require more practice in order to achieve results.

Sleep Hygiene

Sleep hygiene refers to a multitude of practices, activities, and routines that foster regular, consistent deep sleep of adequate duration. Restful sleep is important for physiologic restoration of many body processes and is highly correlated with reducing pain.[109, 110] Although the relationship of poor sleep to injury recovery and return to work is poorly studied, poor sleep predicts incident depression and disability due to depression.[111] A regular daily sleep cycle, enough time in bed, sound dietary practices, and proper exposure to natural light are considered essential components of good sleep hygiene. Telltale indicators of poor sleep hygiene include sleep disturbances (repeated wakening) and daytime sleepiness. Individual variations may require tailoring sleep routines. Online resources provide additional details and tips for optimizing one's sleep routine.

Related/similar approaches: Meditative movement interventions, relaxation.

Sleep hygiene strategies:

- Establish a regular sleep routine – Go to bed and wake up at approximately the same times (within a half hour) every day, including weekends.
- Follow a regular bedtime routine such as a regular quiet period, meditation, warm bath prior to going to bed.
- Avoid regular reliance on naps to deal with tiredness. Naps may make it harder to get to sleep at night.
- Get the right amount of sleep every night. Too little OR too much can upset sleep cycles and contribute to insomnia.
- Avoid eating and stimulants (e.g., caffeine, tobacco, certain medications and supplements) for several hours before bedtime.
- Establish a bed - sleep relationship. Avoid reading, online time, or watching TV in bed to prevent associating the bed with wakefulness. If you can't fall asleep within about 10 minutes, or awake with your mind racing, try sitting in a chair in the dark without stimulation until you feel sleepy again.
- Regular daytime exercise (avoid afternoon or evening workouts) promotes many healthful benefits including facilitating more restful sleep. Even simple aerobic activity such as walking, as well as more meditative approaches such as yoga or t'ai chi can be helpful.
- Bed comfort is essential: a comfortable mattress, good ventilation, comfortable temperature (a little cooler is usually better than warmer) quiet, dark.

Relevant sleep hygiene studies:

- A review of 29 polysomnography studies evaluated differences between nonmalignant chronic pain patients and controls.[109] Differences in objective measures of sleep continuity and sleep architecture were reported with pain patients. Patterns of sleep disturbances included altered sleep continuity,

increases in light sleep, and decreases in slow-wave sleep. Interpretation was complicated by study limitations, and causative relationships cannot be made.

- A 2015 Cochrane review of nonpharmacological approaches to improving sleep in critically ill intensive care unit patients included 30 trial covering 1,569 participants.[112] Overall methodological quality was low with evidence supporting earplugs and eye masks having benefit for improving sleep in these environments.
- A 2015 meta-analysis of 14 studies (10 with low risk of bias) involving 1,225 participants examined the pooled effect of meditative movement interventions (MMI) sleep quality in elderly patients.[113] MMIs included t'ai chi, yoga, qigong, and multicomponent approaches. The interventions resulted in significantly better sleep quality scores (considered to be a moderate effect) than either active therapy or usual care/wait-list controls. Subgroup analyses revealed that the effect of MMI on sleep quality was not influenced by the type or duration of the intervention. However, pooled results of studies with intervention frequency of fewer than 3 times per week did not show a positive effect on sleep quality. Lower-quality studies had larger effect sizes than high-quality studies. No adverse events were reported.
- A 2015 systematic review of randomized sleep trials in the Cochrane database reported on non-pharmacological sleep treatments on a broad population of adult pain patients (cancer, back, fibromyalgia, arthritis).[114] Self-reported sleep quality, pain, fatigue, depression, anxiety, physical and psychological functioning were outcomes. Nonpharmacological sleep treatments in chronic pain patients were associated with a large improvement in sleep quality, a moderate improvement in fatigue, and small reduction in pain post treatment. Improvements in sleep quality and fatigue were maintained at 1 year follow-up and reduced depression scores were observed at that time period. Both cancer and non-cancer pain patients benefited. Face-to-face treatments achieved better outcomes than those delivered over the phone/internet.
- A 2015 narrative review sought to derive guidance for kinds of physical exercise and movement that had been reported to improve sleep quality.[115] Physical activity has been associated with improvements in general health, reduced disease risk, and slowed progression of chronic illnesses such as cardiovascular disease, type 2 diabetes, and obesity. When applied to chronic pain conditions within appropriate parameters (frequency, duration, and intensity), physical activity significantly improves pain and related symptoms. For chronic pain, strict guidelines for physical activity are lacking, but frequent movement is preferable to sedentary behavior. Authors concluded that there is considerable leeway for prescribing physical activities, suggesting that when tailored individually, progressed incrementally, and accounting for physical limitations, psychosocial needs, and available resources, they are likely to be employed with greater success.
- A 2016 study of 2596 military recruits identified suicide relevant factors that predicted treatment engagement/adherence, suicide attempts, suicidal ideation and major depressive episodes in subsequent military service.[116] A battery of baseline, self-report measures were then compared to suicide relevant factors documented in medical records at 18 months. Suicide and suicidal ideation were very rare in the sample. Insomnia and agitation were strongly associated with mental health visits at baseline and throughout the 18 month study period. Insomnia was the only significant predictor of major depressive episodes.
- Poor sleep has been reported to be an important etiology for depression.[111] A longitudinal study of self-reported sleep quality and its association with depression and disability retirement due to depression, a population-based sample of twins (n=12,063) were categorized by their sleep quality in 1975 and 1981 (excluding those identified with depressed mood at either time point). Beck Depression Inventory (BDI) and its Negative Attitudes Toward Self (BDI-NATS) administered in 1990 and incidence of disability retirement due to depressive disorder during 1991-2004 were outcomes. Onset of poor sleep in 1971 and 1981 predicted depression, with persistent poor sleep having a slightly weaker correlation. Among those with few recent stressful life events, onset of poor sleep strongly predicted depression while onset of poor sleep by 1981 and persistent poor sleep increased the risk of disability retirement due to depression.

SPECIALIST-PROVIDED PDIR INTERVENTION OPTIONS

"Specialist-Provided" options in this section may overlap with several AP-provided options, but are generally groupings of PDIR interventions that utilize a number of succinct, brief interventions in a more systematic and intense fashion. Some options are readily available by AP referral. However, the field is evolving rapidly, significant variation in availability and expertise with injured workers can be an issue in the community. Currently, vocational recovery assistance and activity coaching are widely available for L&I cases. Referral for brief interventions for behavioral support related to an accepted condition does not require pre-authorization, however if a psychological or psychiatric condition is diagnosed, services can require preauthorization by a claim manager and may require greater support of clinical necessity, e.g. as a barrier to recovery. Increasingly, psychologists and other providers may be able to provide brief interventions for behavioral health support, particularly through relationships emerging within COHEs.

Many providers engaged with chronic pain, collaborative care and structured intensive multidisciplinary programs are trained and familiar with these approaches. Still, there is significant variation among providers and across regions. A distinction by provider type or specialty does not directly correlate with best practice approaches for PDIRs. In addition to many behavioral health practitioners, many providers of physical methods (e.g., physical/occupational therapists, chiropractor, and physical medicine and rehabilitation physicians) routinely incorporate PDIR strategies that effectively address psychosocial issues influencing recovery. Referring providers are encouraged to understand the intervention options and be able to communicate with specialists to assure that time-limited, functional and goal-oriented, evidence-based options will be provided.

Vocational Recovery and Rehabilitation

Workers who remain connected with their workplace have more successful recovery and experience less disability. Attending providers play a critical role by addressing work abilities and providing front-line coordination with employers to facilitate return to work. When return to work is stalled due to the employer's perceived inability to accommodate work restrictions, return-to-work support is available to assist with creative job modification solutions and wage reimbursement. Programs such as Stay At Work and Preferred Worker assist employers with incentives to bring injured workers back to work. Resources for injured workers who have lost their job as a result of their injury are available as well (e.g., Worksource). Claim managers and health services coordinators in the COHEs are "go-to people" for providers to contact for return-to work assistance with an employer who may not have light duty available.

Related/similar resources: Early Return To Work (ERTW) Program, vocational rehabilitation specialists.

Strategies for addressing return to work with employers

- Build initial employer contact into your clinic workflow with every new L&I patient:
  - 2015 Employer Contact Resource for AP's Office
  - 2015 Notice to Employer of Injured Worker Assessment & Treatment
- If a state fund employer indicates they have no light duty available:
  - Ask if they are aware that L&I may be able to reimburse a substantial part of the worker's wages if they provide medically approved light duty.
  - Ask if they would be willing to talk with a return to work specialist, and let the claim manager know.
  - Return To Work Assistance For Employers

Relevant vocational intervention studies:

- A 2012 review of electronic and grey literature from 1990 and 2008 identified empirical studies reporting employment effects and/or process evaluations of government policies aimed at employers to bring disabled individuals back to work in Canada, Denmark, Norway, Sweden and the UK.[117] Workplace adjustments had positive impacts on employment, but low uptake. Financial incentives such as wage subsidies can work if they are sufficiently generous. Involving employers in return-to-work planning can reduce subsequent sick leave and be appreciated by employees.
- A review of available literature and federally funded return to work roundtable of experts in 2008 identified strategies for optimizing needs of multiple stakeholders (worker, employers, providers) in injury management and return to work.[118] Authors reported a need for a common language as well as policies that incorporate interprofessional contributions of all stakeholders. Shared goals and building capacity for sustaining collaboration among multiple involved parties help maximize effectiveness, efficiency and productivity.
- A 2010 literature review examined effects of different timing of structured interventions for workers on sick leave due to low back pain on return to work (RTW), and the consequences for costs and benefits.[119] Cost-benefits of RTW intervention for workers on sick leave were determined by the estimated effectiveness of the intervention, the costs of the intervention, the natural course of RTW, the timing of the enrolment of subjects into the intervention, and the duration of the intervention. For RTW occurring in the first few weeks following onset, the only early interventions likely to be cost-beneficial were inexpensive work-focused enhancements (e.g., workplace accommodation). Structured interventions were unlikely to have an additional impact on the already good prognosis when offered before the optimal time window at approximately 8 to 12 weeks.

Activity Coaching

Activity coaching is a generic term to characterize systematic strategies to engage workers in injury recovery in order to return to normal activities (activities of daily living, return to work, recreational or professional athletics). Several common psychosocial dimensions strongly correlate with prolonged disability from work injuries including low recovery expectations, activity avoidance, perceived injustice, catastrophic thinking, along with concurrent mental health conditions such as depression and anxiety.[81, 120, 121]

Currently, there are an increasing number of L&I-approved activity coaches who have been certified to deliver a Progressive Goal Attainment Program - PGAP®. [122] The program has been helpful in facilitating return to work in individuals who with musculoskeletal injuries, chronic low back pain, fibromyalgia, as well as debilitating mental health conditions such as depression and post-traumatic stress disorder. Recent refinements to the PGAP approach have incorporated a stronger return to work focus, including setting a return to work date. A standardized approach adapts cognitive behavioral techniques to address psychosocial dimensions including activity avoidance, catastrophic thinking, perceived injustice, and recovery expectations in order to position improvement in function and disability reduction as the objectives of treatment (rather than symptom management).

Referring a worker for activity coaching:

- Link: Patient information about activity coaching
- Link: Referral for activity coaching

Relevant activity coaching studies:

- A cohort of 30 women with fibromyalgia (FM) were enrolled in a 10-week Progressive Goal Attainment Program measuring pain severity, pain catastrophizing, fear of movement, depression, and self-reported disability.[123] The cohort's treatment response was compared to a matched sample of 30 women with chronic low back pain that had previously completed PGAP. Both groups showed comparable reductions in pain catastrophizing, depression, and fear of movement through the course of treatment. Individuals with FM were less likely than individuals with CLBP to show clinically meaningful reductions in pain severity and self-reported disability. Patients with FM were less likely to return to work (23%) than participants with CLBP (50%).
- In a 2012 cohort study, 23 individuals with chronic musculoskeletal pain were enrolled in a telephonically administered version of the Progressive Goal Attainment Program (PGAP-Tel).[124] Outcomes of PGAP-Tel were compared to a matched cohort of chronic musculoskeletal pain patients attending in-person PGAP. Both groups showed comparable reductions in pain, depression, fear of symptom exacerbation, and self-reported disability. In-person participants showed greater reduction in catastrophic thinking. Return to work was also higher in the in-person cohort (56%) than the telephonic cohort (26%). Although not as impactful on return to work, a telephonic version may have utility for rural communities.
- A 2005 study examined the degree psychosocial risk factors were reduced and return to work was achieved among 215 workers with musculoskeletal injuries attending PGAP.[125] Workers had averaged 7 months off work. Following the program, 63.7% of participants returned to work within 4 weeks. Reductions in targeted risk factors were: catastrophizing (32%), depression (26%), fear of movement/re-injury (11%), and perceived disability (26%). Elevated pretreatment scores on fear of movement and re-injury or pain severity were associated with a lower probability of return to work while only reductions in pain catastrophizing were significant predictors of return to work.

Emotion & Behavior Management

At its simplest, emotion and behavioral management might be characterized as trying to find an optimal balance between 'too much' and 'too little' emotion or behavior. Emotions are the feelings one has while behaviors are the actions one takes based on them. Emotion and behavioral management therapies tend to be based on behavioral interventions from cognitive behavioral therapy approaches. Psychologists have typically addressed emotional or behavioral problems with CBT based counseling and a variety of systematic approaches directed at understanding and managing one's feelings and their relationships to behaviors. Depression is a common condition such approaches are used for and randomized trials indicate that behavior focused approaches (behavioral activation) are equally effective or somewhat better than medication or CBT for major depression. [126, 127]

Anxiety may also be addressed with emotion and management therapies. Multiple studies have reported strong correlations between anxiety and chronic pain or disability.[128-130] Additionally, the presence of multiple problems may be more significant contributor to disability than any single factor on its own.[128] "Modular" approaches break interventions into understanding it (what brings it on, what it interferes with, what it stops one from doing, variations in its severity – temporary or persistent stress) and dealing with it (managing to cope with anxiety, finding ways to reduce it). Education about coping tools such as relaxation and correcting incorrect assumptions and beliefs and systematic exposure (repeatedly confronting triggering situation in both thought exercises and real life settings make up common treatment "modules." Acceptance and cognitive behavioral approaches have also shown effectiveness in reducing anxiety, however mindfulness-based approaches appear to be inadequate. [82, 131]

Strategies for addressing anxiety:

- Identify common distortions such as jumping to negative conclusions and worst case scenarios.

- Determine all possible outcomes to assess the real odds of the worse outcome.
- Develop lists of ways to cope when a triggering event is encountered.
- Mindfulness and problem solving for scattered thinking, relaxation.

Related/similar approaches: Behavioral activation therapy, modular anxiety treatment, dialectical behavior therapy, functional analytic psychotherapy.

Referring a worker for emotion and behavior management:
CBT and BAT for depression and anxiety are typically provided by psychologists. Increasingly, brief interventions for managing anxiety and stress are becoming available in collaborative care settings, in some COHEs, and by referral to various providers offering brief interventions.

Studies relevant to emotion and behavior management:

- A follow-up study of responders from a randomized trial of adults with major depression reported that those treated with medication but withdrawn onto pill-placebo had more relapse through 1 year of follow-up compared to patients who received prior behavioral activation, prior cognitive therapy, or continued medication.[127] Prior psychotherapy was also superior to medication withdrawal in the prevention of recurrence across the 2nd year of follow-up. Specific comparisons indicated that patients previously exposed to cognitive therapy were significantly less likely to relapse following treatment termination than patients withdrawn from medication, and patients previously exposed to behavioral activation did almost as well relative to patients withdrawn from medication, although the difference was not significantly different. Differences between behavioral activation and cognitive therapy were small in magnitude and not significantly different across the full 2-year follow-up, and each therapy was at least as efficacious as the continuation of medication. These findings suggest that behavioral activation may be nearly as enduring as cognitive therapy and that both psychotherapies are less expensive and longer lasting alternatives to medication in the treatment of depression.
- A 2009 systematic review of behavioral activation treatment (BAT) depression identified three meta-analyses, one randomized controlled trial and one follow-up of an earlier randomized control trial.[132] Behavioral activation was consistently reported as superior to wait list and treatment as usual control groups. Effect sizes were not different from cognitive behavior therapy or cognitive therapy, both post-treatment and at follow-up. BAT has advantages over pharmacotherapy (no side effects, less relapse and recurrence, lower cost). Some evidence supports use in cases refractory to standard CBT (severe, lifelong depression, substance abuse, dementia with severe depression).
- A 2009 meta-analysis of 34 randomized studies of behavioral activation therapy (BAT) with 2,055 participants reporting symptoms of depression concluded that BAT interventions were effective alternative treatments of depression in adults.[133] Long term benefits were unclear. Potential for bias in the review and limitations with the included studies and analysis mean the authors' conclusions should be interpreted with caution.
- A sample of 683 consecutively admitted injury patients were screened for post-traumatic stress and other anxiety disorders during hospitalization.[134] High-risk patients were followed up at 4-weeks post injury and assessed for anxiety and depression symptom levels. Patients with elevated symptoms were randomly assigned to receive 4–10 sessions of cognitive–behavioral therapy (n = 24) or usual care (n = 22). Screening in the hospital identified 89% of those who went on to develop any anxiety or affective disorder at 12 months. Relative to usual care, patients receiving early intervention had significantly improved mental health at 12 months.
- A 2014 meta-analysis of 12 randomized controlled trials (RCTs) addressed mindfulness-based interventions (MBIs) for an anxiety or depressive disorder in order to determine how cognitive, affective, and motivational features of depression and anxiety impacted mindfulness based interventions. (Strauss 2014) There were significant post-intervention effects were demonstrated for depressive symptom severity but not anxiety symptom severity.

Acceptance Interventions

Compared to the broader scope of emotion and behavior management, acceptance and commitment interventions are geared more narrowly to learn not to fight, rather, improve flexibility to "get over" difficult situations. Acceptance and Commitment Therapy is an example of one systematic approach derived from CBT techniques delivered in solo or group therapy settings usually by a psychologist or similar provider. A 'lighter' version known as Acceptance and Commitment Training is also emerging in classes and online version. Either approach typically involves interventions lasting several weeks.

Acceptance interventions typically emphasize several key elements:[135]

- Reduce tendencies to enable fallacies (e.g., incorrect thoughts, beliefs).
- Learning to allow thoughts to come and go without struggling with them.
- Using mindfulness to stay in the present.
- Delineating one's core values.
- Setting and acting on specific goals.

Related/similar approaches: Behavioral activation therapy, acceptance and commitment therapy, dialectical behavior therapy, functional analytic psychotherapy.

Referring a worker for acceptance and commitment interventions:
CBT and Acceptance and Commitment Therapy (ACT) are typically provided by psychologists. Increasingly, brief interventions are becoming available in collaborative care settings, in some COHEs, and by referral to various providers offering brief interventions.

Studies relevant to acceptance and commitment interventions:

- A 2014 meta-analysis of 39 randomized controlled trials on the efficacy of acceptance and commitment therapy (ACT), included 1,821 patients with mental disorders or somatic health problems.[136] ACT outperformed controls (waitlist, psychological placebo, and usual care) posttreatment and at follow-ups for primary outcomes. Authors concluded that ACT may be as effective in treating anxiety disorders, depression, addiction, and somatic health problems as established psychological (CBT) interventions.
- A 2016 meta-analysis appraised efficacy of ACT for depression and anxiety, noting that previous positive reviews included studies for anxiety associated with another medical condition.[131] Findings suggested that ACT demonstrates at least moderate group and pre-post effects for symptom reductions for both anxiety and depression. However, incorporating sequential meta-analysis led the authors to conclude that there is insufficient evidence that ACT for anxiety is efficacious when compared to active control conditions or as primary treatment for anxiety or for depression compared to active control conditions.

Resilience Training

Resilience refers to the ability to "bounce back" from difficult or negative experiences. Adapting well in the face of adversity, trauma, stress, or tragedy is a normal characteristic in most people. Health problems, family and relationship issues, financial stress and work stress are among the most common areas where one's resilience is put to the test. Resilient people still experience challenges, difficulty and distress; sadness and devastation are normal reactions to major trauma (emotional or physical). Resilience can be learned in that it is a result of thoughts and actions, which when implemented become behaviors. Learning to become (more) resilient utilizes many of the skills and practices associated with other PDIRs. And like many PDIRs, individuals vary in how they react to life events, their cultural norms, learning strategies and the like. Patients who are struggling with bouncing back need to be engaged in figuring out how to improve their resilience. Various self-help resources are available on-line and in books.

Behaviors and characteristics of resilience include:

- Setting goals, making specific plans to reach them, then taking actions to do so.
- Maintaining focus on the desired state (e.g., self-confidence, optimism towards achieving goals).
- Problem solving skills.
- Ability to manage one's emotions and behaviors.
- Availability of good family and social support systems.

Studies relevant to resilience:

- A 2014 systematic review and random-effects meta-analysis of randomized studies of resilience training programs since 1990 identified 25 small trials at moderate to high risk of bias.[137] A moderate effect of generalized stress-directed programs on enhancing resilience within 3 months of follow up was reported and improvement in other outcomes was favorable, reaching statistical significance after removing two studies at high risk of bias. Trauma-induced stress-directed programs significantly improved stress.
- Efficacy of a resilience skills intervention for promoting positive emotion, enhancing neurocognitive capacities, and reducing symptoms was investigated in a randomized controlled trial with a veteran population diagnosed with post-traumatic stress disorder (PTSD).[98] Attrition was reported to be 8% with improvement reported for primary symptom and wellbeing outcomes considered meaningful with PTSD. Secondary analysis for groups with comorbid diagnoses, such as chronic pain also showed positive results.

Targeted Brief Interventions

Several kinds of providers may be able to offer brief interventions for PDIR problems that are beyond the APs capacity. Cognitive Behavioral Therapy (CBT)-based behavioral counseling for coping issues, stress management, problem-solving, goal setting, etc. may be appropriate for some individuals. In settings where collaborative behavioral health care support exists, care managers may be able to offer brief interventions in support of an AP's usual care. In other settings, some psychologists, psychiatric nurses, occupational therapists, and others may be accessed by referral to focus on a particular PDIR or PDIRs that are impeding recovery. Keep in mind that many non-healthcare system or self-care approaches might also be beneficial (such as a yoga class), but would not be considered a covered benefit in workers' compensation.

Mental and behavioral health interventions may be considered: with diagnosed mental health conditions that are accepted on a claim, if they are a barrier to recovery, or with chronically disabled workers that may be appropriate for an intensive, multimodal pain program. Mental health conditions per se may not be routinely accepted as work-related conditions. This section provides a high level summary of the kinds of interventions employed for common mental health conditions which may help inform referral options. Processes, approaches, and techniques used in interventions presented here may overlap with interventions used for PDIRs. Various specialists that provide care for mental health conditions may also be able to offer care for the less intense PDIR issues for workers without a diagnosed mental health condition.

Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) is derived from behavioral models that consider psychopathology to result from maladaptive associations between thoughts, emotions, and behaviors. At its most simplistic, CBT consists of a large multitude of strategies to facilitate a constructive problem-solving relationship between therapist and patient with specific, goal-oriented sessions to modify maladaptive behaviors identified as barriers to normal functioning. Example strategies include: psychoeducation, cognitive restructuring, exposure therapy, behavioral activation, and homework assignments.

CBT approaches have the most outcome evidence of the various psycho therapies supporting its effectiveness. Studies can be found for some conditions that may impact injury recovery such as depression, anxiety, and some personality disorders.[138, 139] The most robust effect of CBT occurs with psychological disorders. Its impact on chronic pain alone seems less robust (Hoffman 2012) and CBT may have effects comparable to physical interventions generally.[75] For refractory chronic pain, evidence for sustained comprehensive multimodal programs incorporating physical and cognitive approaches is more robust (see Structured Pain Programs). Time-limited CBT interventions may be best incorporated as adjuncts to usual care for concurrent psychological conditions or refractory PDIRs concurrent with usual care strategies, however, such granularity of effectiveness has not been well-studied to date.

Generally, CBT approaches helpful for workers engage them in exploring their thinking and beliefs about their injury and condition by:

- Identifying and discussing underlying beliefs using a non-judging approach ("Tell me what you think might happen…")
- Factually challenging catastrophic and irrational beliefs ("I can see why you think that; Studies show that less than 1% of injuries result in…")
- Replacing irrational beliefs with rational ones ("As the disc material gradually resorbs, the inflamed nerve gradually stops hurting. Increasing your walking just a little bit each day will help speed the process.")
- Developing tangible actions, tasks, and/ assignments to do at home or work.
- Repetition of new beliefs, self-talk, reinforcement of benefits of adaptive approaches.
-

Issues common to work disability for which may warrant consideration for a CBT referral include:

- Fear and disability behavior with activity avoidance contributing to development chronic pain.
- Moderate to severe depression or anxiety concurrent with worse recovery than would be expected for their injury.
- Moderate to severe levels of perceived injustice associated with low engagement in recovery or care plan.
- Maladaptive thought patterns including helplessness ("it will never get better"), magnification ("this could destroy my life"), rumination ("it hurts constantly"), catastrophic thinking ("if I do these exercise it will paralyze me").

Relevant studies related to CBT

- A systematic review and meta-analysis from 2016 focused on CBT compared to physical interventions in chronic back pain patients.[75] Comparative effectiveness of physical, behavioral/psychologically informed, and combined interventions on pain and disability was assessed. Studies included (24) met Cochrane Back Review Group risk of bias criteria. Only small differences (not considered to be clinically significant) in pain or disability were observed between physical, behavioral/psychologically informed, and combined interventions. A principle limitation of this review may be the simple categorization of interventions into physical, behavioral/psychologically informed, and because the interventions included multiple approached within each category and could not be easily differentiated to allow accurate comparisons.
- CBT combined with general exercises was compared to general exercises alone in 54 chronic low back pain patients.[140] Patients were randomly assigned into two groups which both groups received a home exercise program as well. Three treatment sessions per week for 12 consecutive weeks were provided and outcomes consisted of pain (VAS) and function (RMDQ) at baseline and 12 weeks. Both study groups showed statistically significant improvements in both outcomes measures p=0.000. However, mean improvements in post intervention VAS and RMDQ was better in the group that included CBT.
- A 2012 comprehensive survey of meta-analyses examined efficacy of CBT identifying 269 meta-analytic studies and reviewing 106 reports for substance use disorder, schizophrenia and other psychotic disorders, depression and dysthymia, bipolar disorder, anxiety disorders, somatoform disorders, eating disorders, insomnia, personality disorders, anger and aggression, criminal behaviors, general stress, distress due to general medical conditions, chronic pain and fatigue, distress related to pregnancy complications and female hormonal conditions.[141] The strongest support

exists for CBT of anxiety disorders, somatoform disorders, bulimia, anger control problems, and general stress. Eleven studies compared response rates between CBT and other treatments or control conditions. CBT showed higher response rates than the comparison conditions in seven of these reviews and only one review reported that CBT had lower response rates than comparison treatments.

- A 2006 review of meta-analyses of treatment outcomes of CBT for a wide range of psychiatric disorders identified 16 methodologically rigorous meta-analyses. [139] The review focused on effect sizes that contrast outcomes for CBT with outcomes for various control groups for each disorder. Large effect sizes were found for CBT for unipolar depression, generalized anxiety disorder, panic disorder with or without agoraphobia, social phobia, posttraumatic stress disorder, and childhood depressive and anxiety disorders. Effect sizes for CBT of marital distress, anger, childhood somatic disorders, and chronic pain were in the moderate range. CBT was somewhat superior to antidepressants in the treatment of adult depression. CBT was equally effective as behavior therapy in the treatment of adult depression and obsessive-compulsive disorder. Large uncontrolled effect sizes were found for bulimia nervosa and schizophrenia.

Structured Chronic Pain Programs

Chronic non-cancer pain programs consisting of comprehensive, multidisciplinary approaches to addressing reactivation and cognitive behavioral interventions with chronic pain patients exist and may be considered in certain situations. These programs are characterized by ongoing, coordinated intensive on-site care involving multiple specialists. The Commission on Accreditation of Rehabilitation Facilities (CARF), an independent, non-profit organization addresses quality and consistency of many types of medical, behavioral, youth and aging services including Interdisciplinary Pain Rehabilitation (IPR) and Occupational Rehabilitation Programs (ORP). Services are characterized by outcomes-focused, goal-oriented, team management interventions aimed at minimizing impairments, reducing activity limitations, decreasing barriers, and optimizing engagement and participation for a better quality of life. Progressive, stepped care strategies directed toward demonstrable functional progress typically involve a variety of CBT, and physical reactivation strategies and often address reducing dependence on addictive pain medications.

L&I identifies “Structured Intensive Multidisciplinary Programs” (SIMP) for coverage of a comprehensive, intensive program with prior authorization by a claim manager. Referrals for SIMPs are primarily authorized for workers who have become chronically disabled. SIMP programs are all day, onsite programs for up to four weeks, with post completion follow-up, typically coordinated with the workers AP. SIMPs must provide the following:

- Evaluation – Comprehensive assessment of the workers clinical, psychosocial, and functional situation with development of a comprehensive treatment plan. The assessment includes review of previous records of care, identification of associated conditions hindering recovery, pain medication use (opioid dependence), psychological and social assessment using validated instruments and tests, support resources, worker-specific factors (e.g., motivation, capacity for participation) resulting in a written report summarizing the assessment and a written preliminary, timed treatment plan that includes potential barriers to successful progress.
- Treatment – Up to 20 business days of full day interdisciplinary care involving physicians, psychologists, physical/occupational therapists, allied staff (e.g., nurses, vocational specialists) and care coordinators as appropriate. Cognitive behavioral therapy, progressive physical activity / exercise, coordination with other aspects of the worker’s life and claim, along with education and skill development for coping with pain are all included as part of the treatment. Progress is tracked measuring both pain and function (including real or simulated work activities) and a discharge plan to continue exercise, cognitive and behavioral techniques, and pain coping skills.
- Follow-up – Within up to six months of discharge, community-based follow-up care for reintegration into work, daily activities and return to work goals may be authorized. Mechanisms for face-to-face and distance services are available.

Relevant studies related to structured chronic pain programs

- Several systematic reviews have addressed dozens of well-done studies which consistently indicate multidisciplinary pain programs are of benefit for chronic low back pain compared to usual care or waiting list controls.[142, 143]
- A 2014 study focused on 263 outpatients with a variety of non-cancer chronic pain conditions for clinically meaningful change.[144] Statistically significant improvement maintained at 3-month follow-up was reported for all post-treatment measures (PDI, BDI-II, 6-Minute Walk Test, Usual Pain Intensity, MPI). Results of the clinically important change analysis revealed that not everyone improved uniformly, and the magnitude of change varied across the 3 different methods. No differences were found between responders and nonresponders to treatment. Authors noted that clinically important change analyses underscored the variability across in chronic pain patients, emphasizing the need to consider individual responsiveness to treatment.
- A 2016 observational study of 2,272 patients treated in one of 3 Canadian university-affiliated multidisciplinary pain treatment centers investigated predictive association between expectations and clinical outcomes in a large database of chronic pain patients.[145] Patients received personalized medical, psychological, and/or physical interventions. Patient expectations regarding pain relief and improvements in quality of life and functioning were measured before the first visit to the pain centers and served as predictor variables. Changes in pain intensity, depressive symptoms, pain interference, and tendency to catastrophize, as well as satisfaction with pain treatment and global impressions of change at 6-month follow-up, were considered as treatment outcomes. Structural equation modeling analyses showed significant positive relationships between expectations and most clinical outcomes, and this association was largely mediated by patients' global impressions of change. Similar patterns of relationships between

variables were also observed in various subgroups of patients based on sex, age, pain duration, and pain classification. Such results emphasize the relevance of patient expectations as a determinant of outcomes in multimodal pain treatment programs. Furthermore, the results suggest that superior clinical outcomes are observed in individuals who expect high positive outcomes as a result of treatment.

Other Psycho-therapies

A number of primarily theory-based approaches such as Psychodynamic, Humanistic/Experiential, Systemic, and Integrative therapies are employed in general psychology practice. These kinds of psycho-therapy are typically longer term therapist-client counseling relationship approaches aimed at getting individuals 'in touch' with their beliefs, cultural, and interpersonal experiences, emotions, for the purpose of overcoming maladaptive behaviors. As a general rule, the evidence-base for these approaches is limited and primarily theoretical with some emerging empirical literature but without much well-done experimental research.[139] Because of their limited evidence-base and focus on upbringing and life in general, these approaches generally are not recommended for the addressing psychological issues associated with work injuries.

Medications for pain, sleep disturbance and some psychological problems may not be the best option. Many non-pharmacological alternatives are equally or more effective than drug therapy. Psychotropic, opioid, and sleep medications can be particularly problematic due to side-effects or addictive properties. This section briefly addresses drugs that are frequently prescribed for injured workers but warrant caution before using them.

Opioid Medications

Opioids are a powerful and commonly used class of drugs in the treatment of acute and chronic pain. However their use in work injuries has been associated with significant adverse events including death from accidental overdose and addiction.[146, 147] Further, even a single prescription of opioids for an acute injury is associated with dramatically increased risk of disability.[197] The availability of numerous non-opioid and non-pharmacological alternatives warrants careful consideration before prescribing.[148, 149] For workers on opioids or workers being considered for an opioid prescription, L&I requires adherence to its guideline for Prescribing Opioids to Treat Pain in Injured Workers.

Bottom line: *Opioids should* ***not*** *be a first resort for most musculoskeletal injuries. When prescribed they should be given for a very short time period and closely monitored.*

Psychotropic Medications

Despite common assumptions and marketing, psychotropics have been shown to have benefits over placebo ***only in the setting of specific psychiatric disorders.*** [150] There is no evidence of medication effectiveness for mild or sub-threshold depression or anxiety. It is not true that "a little depression or anxiety" should be treated with "a little medication".

Symptoms versus conditions: Major depression and anxiety disorders (e.g. panic disorder, generalized anxiety disorder) require the presence of specific diagnostic criteria. If all of the criteria are not present, a diagnosis is not warranted. The PDIR resource does not address the treatment of such psychiatric conditions. If they are present, mental health treatment that is directed at the conditions (either in primary care or specialty care clinics) should be considered.

There are no DSM diagnoses for "mild depression" or "mild anxiety". Occasional or transient feelings of low mood or unease are part of normal life experience. Adjustment disorder is a DSM condition involving clinically significant symptoms of depression and/or anxiety within three months of an identified stressor, but without meeting criteria for another diagnosis. As with mild or subthreshold anxiety and depression, there is no evidence of benefit from medications in adjustment disorder. As one review found, "The use of psychotropic drugs such as antidepressants, in adjustment disorder with anxious or depressed mood is not properly supported and should be avoided." [151]

Patients may desire something to make them feel better, and providers may expect that their only treatment option is a prescription. A prescription can be the "ticket out the door" to end the appointment. But starting a medication for a mild psychiatric condition can end up doing more harm than good, for several reasons:

- Patients may come to believe that since they are receiving an antidepressant, they must be depressed.
- Medications are often harder to stop than to start.
- Side effects (especially sexual dysfunction) occur commonly and are not benign.
- Most antidepressants have withdrawal effects (which can lead to a false perception of benefit from taking a pill).

Bottom line: *Unless there is a specific psychiatric diagnosis, do not prescribe psychotropic medications.*

Sleep Medications

People often complain of difficulty sleeping during stressful life events. Insomnia, restlessness, inadequate duration of sleep are disturbances for which a provider can make a direct and positive difference. Before defaulting to prescribing medications for sleep, consider the frequent, unintended, negative consequences from sleep medications including dependence, rebound insomnia, cognitive problems, and injuries. Many sleep medications pose a risk for driving.

A recent view found that "the comparative effectiveness and long-term efficacy of pharmacotherapies for insomnia are not known. Pharmacotherapies for insomnia may cause cognitive and behavioral changes and may be associated with infrequent but serious harms." [152] Most sleep problems resolve spontaneously, or when the acute stressor improves. If insomnia persists, behavioral approaches are very effective, usually more effective than medications. Some of these are structured therapy programs, and others involve relatively simple interventions. Given the risks associated with medications for insomnia, it is safer not to prescribe a medication.

Bottom line: *Taking action around sleep hygiene is a preferred approach.*

Substance Abuse Treatment

Substance abuse can be a significant problem in all aspects of life, and it may be a big challenge for workers coping with disability and chronicity. Alcohol, opioids (both prescription and street varieties such as heroine), amphetamines and methamphetamines, benzodiazepines, as well as cannabis are the most common substances for which addiction may negatively impact recovery. Addressing addiction is difficult and time consuming for providers, and like other psychological and medical situations for which work-relatedness can be problematic, treatment under workers' compensation benefits may be difficult to have authorized, or may not be covered.

The attending provider should be sure to document if substance abuse is a problem, including if it may have been a contributor to the industrial injury. If so, this may strengthen justification for substance-abuse treatment being allowed to prevent future industrial injuries, as well as an aid to recovery.

The effectiveness of various substance abuse treatment strategies depends on the addiction. Generally, behavior modification should be a component with all substance abuse treatment. Opioids, however, may necessitate replacement drugs (such as buprenorphine or methadone) that require special prescribing authorization/licensure. There is uncertainty regarding the value of brief interventions for substance abuse; comprehensive and ongoing management programs are usually more successful.

Some state programs (such as Washington's AppleHealth Program) may pay for certain types of substance abuse treatment, regardless of work-relatedness or insurance. Availability of providers and clinics specializing in substance abuse can be problematic, however when they are an option, this may be preferred. Numerous online resources are available to assist providers in working with substance abuse. Awareness surrounding problems of treating pain with opioids has increased. Guidelines for prescribing and tapering off them are available (including 2 hours of Category 1 CME for online review and self-assessment of the L&I opioid guideline):

- Washington State Labor & Industries "Prescribing Opioids to Treat Pain In Injured Workers – http://www.lni.wa.gov/ClaimsIns/Providers/TreatingPatients/ByCondition/Opioids
- Washington Agency Medical Directors Opioid Dosing Information – http://www.agencymeddirectors.wa.gov/
- US Centers For Disease Control & Prevention "CDC Guideline for Prescribing Opioids for Chronic Pain" – http://www.cdc.gov/drugoverdose/prescribing/guideline.html

Substance Abuse and Mental Health Services Administration (SAMSHA): http://www.samhsa.gov/

- Treatment of substance use disorders: http://www.samhsa.gov/treatment/substance-use-disorders

Providers' Clinical Support System for Medication Assisted Treatment (PCSS-MAT): http://pcssmat.org/

- Offers expert mentors to assist with questions or concerns about assessment and treatment of substance use disorder:

Relevant studies related to substance abuse treatment

- A narrative review of ten studies of varying quality assessing self-efficacy approaches for modifying addiction behaviors reported that significant changes in measured behavior attributes were documented in seven of the trials, but the impact on actual sustained behavior change to control addiction is not well studied.[100] Methodology limitations such as inadequate reporting of point estimates or variability, thus precluding a quantitative meta-analysis.
- A 2015 Cochrane review addressed randomized controlled trials examining the use of a psychosocial versus pharmacological interventions, no intervention, placebo, or a different psychosocial intervention on reducing the use of benzodiazepines in both opiate dependent and non-opiate dependent groups.[153] Twenty-five studies involving 1,666 people met quality inclusion criteria. Psychosocial interventions including cognitive behavioral therapy (CBT) (some studies with taper, other studies with no taper), motivational interviewing (MI), letters to patients advising them to reduce or quit benzodiazepines, relaxation studies, counselling delivered electronically, and advice provided by a general practitioner (GP). CBT plus taper is effective in the short term (three month time period) in reducing use but it is not sustained beyond six months. Evidence is insufficient to support the use of MI to reduce use; however some evidence suggests that a tailored GP letter versus a generic GP letter, a standardized interview versus TAU, and relaxation versus usual care could be effective for benzodiazepine reduction. Evidence is insufficient for other approaches.
- Fourteen studies examining physical exercise in the treatment of alcohol abuse disorder (AUD) were the subject of a 2015 systematic review that concluded there was general health benefit, but impact on addiction could not be discerned.[154] Overall evidence quality was considered Level 3 Physical functioning including VO2max, basal heart rate, physical activity level and strength outcomes were significantly improved. Inconsistent effects with a slight trend towards a positive effect on anxiety, mood management, craving, and drinking behavior were reported, but improved experimental design is needed before evidence-based recommendations for exercise could be definitively made.

- A 2015 Cochrane review identified five randomized controlled trials (RCTs) versus placebo, with a total of 2,567 randomized participants, for use of nalmefene for alcohol dependence. [155] Sensitivity analyses showed no differences for alcohol consumption outcomes between nalmefene and placebo.
- Based on a 2014 systematic review of 5 trials of acceptable methodological quality, it is unclear if brief interventions for treatment of non-medical use of psychoactive substance are effective or ineffective for reducing the use of, or harms associated with nonmedical use of, such substances when these interventions are administered to nontreatment-seeking, screen-detected populations. [156]
- Few studies, with poor quality, have assessed the value of urinary drug screening in managing patients using psychoactive substances such as alcohol or cannabis according to a 2014 systematic review.[157] It is unclear if such screening has value in medical management.
- Clients in the national Drug Abuse Treatment Outcome Study reported significant overall improvements in drug use and related measures during a 12-month follow-up period.[158] A quasi-experimental design was used to examine the relationship of treatment duration with outcomes in each of the 3 major modalities represented. Client subsamples with longer retention in long-term residential programs and in outpatient methadone treatment had significantly better outcomes than those with shorter lengths of stay (results were inconclusive for outpatient drug-free programs because of sample limitations).

PDIR TERMINOLOGY GLOSSARY

Activity (fear)–avoidance behavior – psychosocial factor strongly associated with work disability.

Activity coaching – A multimodal PDIR intervention that assesses the patient's barriers to returning to work and work with the patient to overcome them and return to work.

Activity diary – a brief form for the patient that sets and tracks incrementally increasing daily activity goals.

Biopsychosocioeconomic (BPSE) – refers to biological, psychological, social, and economic factors that may be associated with person who has a medical condition, but may not constitute a clinically diagnosable condition on their own.

Catastrophizing (catastrophic thinking) – a potential maladaptive patient characteristic strongly associated as a risk factor for work disability.

Center for Occupational Health & Education (COHE) – community based health care institutions contracted with L&I to recruit providers to utilize occupational health best practices with workers, track their performance and assist them and their workers and involved employers with workers compensation claims.

Early return to work (ERTW) – an L&I resource available to assist employers and injured workers with return to work.

Emotion and behavior management – a PDIR intervention referring to specialist provided programs for depression.

Fear-avoidance – *see Activity (fear) – avoidance behavior.*

FABQ – Fear avoidance belief questionnaire.

FRQ – Functional recovery questionnaire.

GAD-7 – General anxiety disorder (seven question screening tool).

Health services coordinator (HSC) – a resource working at L&I's COHEs who assists employers, providers and workers.

IEQ – Injustice experience questionnaire.

Mental health (MH) condition – refers to a clinically diagnosable psychological problem.

Mindfulness – A PDIR intervention referring to awareness and acceptance of one's current experience; a strategy to help manage emotions.

PCS – Pain catastrophizing scale.

Perceived injustice – psychosocial factor strongly associated with work disability.

Pain coping – PDIR intervention for dealing with pain flair-ups.

PHQ - Patient health questionnaire; PHQ-4 is a short screening tool for depression and anxiety. PHQ-9 is a deeper screening tool for depression.

Physical activation – a PDIR intervention; refers to all strategies that directly facilitate returning to normal activity, including work.

Progressive Goal Attainment Program (PGAP®) – a standardized, structure program utilizing trained and certified provider to address psychosocial risk factors strongly associated with work disability.

Psychosocial – a sub-category of biopsychosocialeconomic factors associated with medical conditions commonly considered the most intervenable in health care settings.

Psychosocial determinants influencing recovery (PDIR) – a term coined for this resource to characterize those biopsychosocialeconomic issues that may be associated with injured workers.

Recovery expectations – a psychological factor strongly associated with injury recovery.

Return to work (RTW) – a central outcome responsibility of workers' compensation systems that is also an important clinical outcome for injured workers.

Sleep hygiene – a PDIR intervention; refers to bedtime and sleep habits or behaviors that are associated with development and sustaining of chronic pain.

TSK-11 – Tampa Scale for Kinesophobia, an 11 question scale regarding fear of movement.

Vocational recovery – a PDIR intervention utilizing vocational specialist within L&I (ERTW) private vocational rehabilitation specialists to assist workers and employer in return to work.

WHODAS 2.0 – World Health Organization Disability Assessment Scale.

ADDITIONAL RESOURCES

L&I Provider Resources

http://www.lni.wa.gov/ClaimsIns/Providers/
http://www.lni.wa.gov/ClaimsIns/Providers/ProjResearchComm/IICAC/Resources.asp

Opioid Prescribing and Management Resources

- Washington State Labor & Industries Prescribing Opioids to Treat Pain In Injured Workers: http://www.lni.wa.gov/ClaimsIns/Providers/TreatingPatients/ByCondition/Opioids
- Washington Agency Medical Directors Opioid Dosing Information: http://www.agencymeddirectors.wa.gov/
- US Centers For Disease Control & Prevention CDC Guideline for Prescribing Opioids for Chronic Pain: http://www.cdc.gov/drugoverdose/prescribing/guideline.html

Substance Abuse and Mental Health Services Administration (SAMSHA)

http://www.samhsa.gov/

- Treatment of substance use disorders: http://www.samhsa.gov/treatment/substance-use-disorders

Providers' Clinical Support System for Medication Assisted Treatment (PCSS-MAT)

http://pcssmat.org/

- offers training and expert mentors to assist with questions or concerns about assessment and treatment of substance use disorders

Washington Apple Health (Medicaid) Program

http://www.hca.wa.gov/medicaid/Pages/index.aspx
https://www.dshs.wa.gov/bha/substance-use-treatment-services

Suicide Prevention Resource Center: http://www.sprc.org/ **1 (800 273-TALK (8255)**

Washington State Local Suicide Crisis Hotlines:

http://www.suicide.org/hotlines/washington-suicide-hotlines.html

SUPPORT SYSTEMS ASSESSMENT AND CONVERSATIONS

A worker's support system includes their family, friends, employer, co-workers, and organizations they affiliate with (e.g., hobbies, faith, volunteer). Depending on the individual, their clinical condition, and impact their work injury has on their employment, their personal support system may be pivotal in their recovery and may need to be incorporated into care planning and management. Sometimes questioning about such support can be sensitive and usually a conversational, open-ended approach may be more revealing than a clinical or checklist strategy. A person's demeanor, openness, and body language when discussing family, friends and coworkers may be as revealing as the answers they give.

Example queries

- Tell me about your family.
- Tell me about parents, brothers, sisters, etc. while you were growing up.
- And now? What kind of contact or communication do you have with any or all of them? Why/Why not?
- Who are your closest family members and/or friends?
- Talk about your friends.
- Who do you discuss problems with?
- If you needed assistance, who would you call?
- Tell me about your spouse/partner.
- Have any children?
- Which of your coworkers do you enjoy working with the most?
- Tell me about how you help each other out at work.

MANAGING HOSTILITY, ANGER, DISRUPTIVE BEHAVIOR

Stresses associated with difficult events, including work injuries, job loss, or difficult clinical decisions occasionally may place an attending provider in a situation with disruptive behavior from an injured worker. Some basic strategies to recognize, prevent and de-escalate such situations should be in the toolkit of every provider and staff member. Understanding sources and triggers for hostility, as well as assessment and intervention strategies can help re-direct a challenging interaction toward a positive outcome.

Assessment	Actions
Common Sources and Triggers • Frustration or anger – inability to cope with things out of their control, negative experience with services (e.g., office staff, long waits, claims issues), disoriented in an unfamiliar environment (building or traffic), administrative hassle (paperwork, run-arounds). • Fear – uncertainty, confusion, anxiety about their condition. • Injustice – being dealt with unfairly, wrongly blamed, no-one understood or empathized with. • Intimidation – pressured about decisions, railroaded into something they're not ready for. • Physical or emotional pain – from the injury or clinical procedure, bad news about their job, benefits or results of a diagnostic test. • Significant health problems – aging, memory loss, neurologic problems, vision, mobility. **Predisposing Factors – be aware of:** • Number/magnitude of problems being confronted. • Personality traits (easily agitated, closed body language, avoiding eye contact). • Clinical history (psychological, medical problems – severity and number). • Environmental (noise level, privacy, inconveniences, loss of control or dignity, parking, staffing change such as lunch hour, transporting, or shift changes). • Current events (economy, organizational changes, divorce, layoffs, natural disasters). **Stress Levels** • Normal – alert and engaged; normal reaction to verbal and environmental stimuli. • Moderate – more focused on themselves, missing conversation, environmental stimuli. • High – unable to think about anything other than what they are focused on, muscle tension discernable, impairment of complex verbal or motor activity. • Panic – essentially unable to process any external stimuli, physical changes (e.g., clenched fists, quivering lips, curt speech, exaggerated responses), may be harmful to themselves or others.	**Safety** • Consider work setting and reacting to violence (exits, objects that could be potential weapons, arrangement of furniture). • Arrange rooms so patients are never between others and a door. • Have plan to group staff together; remove others (patients, staff) from situation. **Demeanor and Communication** • If agitation observed, request/offer to relocate to quieter environment, more convenient time, etc. • Speak calmly, never raising voice, always non-confrontationally. • Respect personal space, always ask permission before palpating, examining, explain what will happen, where they will be touched or contacted, ask if they are tolerating a procedure OK. • Be judicious with humor, never laugh at the worker or their problem, or use sarcasm. • Frame conversations around solutions, assisting, being non-judgmental; never patronize, debate, or threaten. **Reducing Stress and Tension** • Be aware for signs of increasing stress (change in demeanor/behavior, glazing over/staring into space, not grasping information, fidgeting/pacing). • Give undivided attention to them, allow silence, use appropriate facial expressions. • Remain calm, maintain eye contact, listen empathetically, speak in plain, simple language with an even rhythm. • Remain outside of their personal space (2-3 feet away). • Allow ranting or venting. • Convey your understanding by paraphrasing what they have said. • Convey willingness to help and your confidence that they can handle the situation or problem.

ADDRESSING SIGNS FOR SELF-HARM/SUICIDE

Patients expressing self-harm and suicide are extremely rare, but when encountered the importance of proper patient engagement and recruitment of support cannot be overstated.

Assessment

Urgent Intervention Warning Signs:

- Threatening to hurt or kill oneself.
- Looking for ways to kill oneself; seeking access to pills, weapons or other means.
- Talking or writing about death, dying or suicide.

Signs Indicating Need for Urgent Mental Health Evaluation: Safety of an individual may be at risk with the following. Urgency escalates urgency with more signs present:

- Hopelessness.
- Rage, anger, seeking revenge.
- Acting reckless or engaging in risky activities, seemingly without thinking.
- Feeling trapped – like there's no way out.
- Increasing alcohol or drug abuse.
- Withdrawing from friends, family or society.
- Anxiety, agitation, unable to sleep or sleeping all the time.
- Dramatic changes in mood.
- No reason for living, no sense of purpose in life.

Suicide Risk Factors include:

- End of life preparations (updating wills, divesting responsibilities, making financial arrangements, saying goodbye to close friends and loved ones).
- Suicidal ideation, intent, planning, accessing means.
- Hopelessness – particularly current, high intensity or long duration.
- Recent losses – personal, financial, physical or declining health.
- Poor self-control, impulsiveness.
- Alcohol / substance abuse.
- Psychiatric diagnosis, recent discharge from in-patient psychiatric care.
- History of abuse (physical, sexual or emotional).
- Age, gender, race (elderly or young adult, unmarried, white, male, living alone).
- Same-sex sexual orientation.

Factors Protective From Suicide include:

- Positive family and/or social support.
- Spirituality.
- Sense of responsibility to family, children at home, pregnancy.
- Life satisfaction.
- Well grounded, realistic.
- Positive coping and problem solving skills.
- Positive therapeutic relationship.

Actions

Do's:

- Actively listen – allow expression of feelings, accept the feelings, and be patient.
- Be non-judgmental – don't debate whether suicide is right or wrong or whether the person's feelings are good or bad; don't give a lecture on the value of life.
- Be direct – talk openly and matter-of-factly about suicide, what you have observed, and what your concerns are regarding his/her well-being.
- Be available – show interest, understanding, and support.
- Offer hope that alternatives are available (avoid reassurance that any one alternative will rapidly turn things around).
- Take action – remove lethal means of self-harm such as pills, ropes, firearms, and alcohol or other drugs.
- Get immediate help from others with more expertise before the patient leaves the office.

Don'ts:

- Don't act shocked.
- Don't ask "why".
- Don't be sworn to secrecy.
- Don't dare the person to engage in suicidal behaviors.

Resources

Suicide Prevention Resource Center: http://www.sprc.org/ **1 (800 273-TALK (8255)**

Washington State Local Suicide Crisis Hotlines:
http://www.suicide.org/hotlines/washington-suicide-hotlines.html

National Institute of Mental Health:
https://www.nimh.nih.gov/health/topics/suicide-prevention/index.shtml

Veterans Crisis Line: https://www.veteranscrisisline.net/
1 (800) 273-TALK (2855) *press 1*

INTERPERSONAL CONFLICT MANAGEMENT AND RESOLUTION

Although most interpersonal conflict can be dealt with using common sense, patience, and clear but civil communication, sometimes high stress situations lead to instances in families or workplaces where professional guidance or mediation may be necessary. Not only can conflict have direct impact on patients in their lives and recovery, Conflict within clinical settings can negatively impact patient care and satisfaction. Personalities, cultural differences, frank differences of opinions or priorities, and misunderstandings frequently underlie such conflicts. When common sense counseling by the attending provider is inadequate, additional resources may warrant consideration. Many attending providers have solid and empathetic communication skills and can counsel workers through difficult interactions associated with their recovery. Some basic conflict management and resolution strategies are included below along with options for additional assistance for both the personal life and the workplace. [159, 160]

Basic Conflict Management & Resolution

About conflict

- Conflict is a frequent life occurrence, variable in intensity, and can happen in anyone's personal life and at any workplace.
- Conflict can have negative consequences (dysfunctional workgroups, resentment, resignation, indirect impacts on coworkers or family members not engaged in the conflict).
- Conflict has significant cost (lost time in conflict, reduced morale, employee turnover, disruption of care and recovery).
- Skillful conflict resolution can have positive consequences (clarification of issues, better decision-making and teamwork).

About resolution

Multiple conflict resolution approaches incorporate common elements:

- Motivation to address the conflict is essential.
- Engagement typically works better than avoidance.
- A neutral and safe environment is critical for engagement.
- Engagement achieves productive outcome without escalation.
- Cognitive, behavioral and emotional skills for addressing conflict can be learned.
- Self-awareness of parties' physical and emotional reactions is needed.
- Accommodation or yielding to gain harmony involves a party not having needs met.
- Yielding to repetitive patterns can cause resentment (kick it down the road).
- Optimal resolution involves balancing needs of all parties.

About skills

- First step is decision to address conflict based on balancing pros & cons:
  - Usually worth addressing when behavior is affected, or conscience is weighed on.
  - Problem or conversation difficulty and perceived power differences should not be barriers to a decision to address conflict (consider lessons learned from workplace safety and aviation (e.g., failure of a lower level copilot not correcting a pilot error).
- Clarify exact nature of the conflict:
  - One-time event should focus on content of the conflict; repeated conflicts might better focus on the pattern.
  - Conflicts frequently relate to tasks/content, processes, or relationships.
- Clarify parties' positions.
- Conflict intensities may due to perspective differences (which can be constructive), misunderstandings (which indicate communication problems); disagreements (different viewpoints with mutual understanding); discord (involving relationship problems even when conflict is resolved); polarization (intense negative behavior and feelings).
- All intensities require willingness for communication and higher intensities may benefit from third party mediation.
- Difficult conversations should happen when parties are calm and collected.

Assistance Options for Workplace Conflict	Assistance Options for Personal Conflict
• For issues related to return to work consider requesting involvement of vocational recovery specialists whose core competencies include ergonomic and workplace assessment, worker interviewing, social problem solving, workplace mediation, knowledge of business and legal aspects, and knowledge of medical conditions.[160] • For interpersonal conflicts in the workplace, consider employer's Human Resource staff, labor representatives, Project HELP.	• For conflicts among family members' support regarding care decisions, a specialist second opinion consultation may be helpful. • For disagreements from family members' support regarding work and activity recommendations, consider a 'team' consultation including family member, vocational specialist, therapist, etc. • For concerns regarding significant interpersonal conflict and safety at home, consider bringing in a behavioral health specialist familiar with injured workers and issues that can surround them (COHEs, pain clinics, SIMPs, work rehabilitation centers may have, or know of resources with such expertise).

PDIR and MH SCREENING and TRACKING SCALES

This section is a reference guide summarizing common validated psychosocial and mental health scales. They may be helpful for informing care and triage decisions and/or tracking progress with patients where a given issue is prominent. Such scales may not be helpful unless information gained informs progress or care plans.

Initial Screening

- **Functional Recovery Questionnaire (FRQ)** – Currently being pilot tested in L&I's Centers of Occupational Health and Education (COHE) program, the FRQ includes 6 questions of which the first 3 have been shown to be predictive of being off of work at one year post-injury. The remaining questions cover work accommodation, recovery expectation and fear-avoidance, which helps target specific interventions. It has not been validated to track improvement. Its strengths include brevity, validated risk prediction, and initial indication of which PDIRs attending providers should focus on early in care [1, 38, 161, 162]

- **World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0) –** Developed by WHO to measure self-reported function and disability in a standardized fashion. Available in multiple versions (36, 12 questions, self or interview administered) and in several languages. It has been validated to have good scaling properties across different populations along with strong sensitivity to change.[163] It is easily administered and has been validated with both musculoskeletal and mental disorders. Although not diagnostic for physical or mental health conditions, it captures a patient's experience of their situation which may help inform further evaluation and management planning. It may be used without cost but requires registration including completion of a user agreement.[2, 163, 164] http://www.who.int/classifications/icf/whodasii/en/

PDIR Scales

- **Acceptance and Action Questionnaire (AAQ, AAQ-II) –** Available in extended and shortened versions, a 7 item version has been validated to assess how well an individual is coping with life issues, particularly the impact negative experiences and emotions have on someone. [24, 165] The scale is designed to assess the progress with Acceptance and Commitment Therapy (ACT), a psychological brief-intervention approach utilizing acceptance, mindfulness and commitment strategies. [166]

- **COPE –** A scale to assess a broad range of coping responses available as a 60-item (Complete COPE) or 28-item (Brief COPE) version. It has been used for a broad range of situations (hurricane, cancer survival) and has gone through multiple revisions and is available in many languages. [6, 167] http://www.psy.miami.edu/faculty/ccarver/sclCOPEF.html

- **CD Resilience –** A scale developed for the purpose of the assessment of resilience in adults. The scale is comprised of 25 items, each rated on a 5-point scale (0-4), with higher scores reflecting greater resilience. It has been administered in community samples, primary care outpatients, general psychiatric outpatients, clinical trial of generalized anxiety disorder, and two clinical trials of PTSD. [8, 168]

- **Fear-Avoidance Belief Questionnaire (FABQ)** – A 16-item questionnaire validated for chronic low back pain in an injured worker population [169] but may help identify acute back patients at risk of poor outcome. [170] May be used for other conditions by modifying items 3 and 11 from back pain to the condition the patient has. Includes two sections: Physical Activity (PA-5 questions) and Work Activity (WA-11 questions). Each item has an agreement response scale (0 completely disagree- 3 unsure- 6 completely agree). The FABQ has a total score (sum all marked items -96 possible) and two subscales PA (items 2, 3, 4, 5; -24 possible) and WA (items 6,7,9,10,11,12,15; -42 possible). Higher scores reflect higher fear avoidance beliefs and have been reported to better predict 6-month outcomes with physical therapy than the ODI. [171] The FABQ was not designed as a tracking instrument but it has been shown to correlate with TSK-11 scores. [172]. If used for tracking, it is recommended to use 30-50% improvement as meaningful.

- **Injustice Experience Questionnaire (IEQ) –** A 12 item scale for individuals with persistent pain associated with musculoskeletal conditions that assesses elements of blame and irreparability of loss. The scale correlates strongly with catastrophic thinking, depression, and perceived pain severity. It also is predictive of return to work status and changes in IEQ score correlate with treatment-related improvement in physical function. (Sullivan 2008, Scott 2013a) Hierarchical regression analysis in a study of 173 chronic pain patients indicated that anger variables mediated the relationships between perceived injustice and pain intensity, and partially mediated the relationship between perceived injustice and depressive symptoms, however there was not a relationship observed between perceived injustice and self-reported disability.[11] http://sullivan-painresearch.mcgill.ca/ieq.php

- **Life Satisfaction Questionnaire 9 (LSQ-9) –** Assesses various aspects of a patient's life satisfaction, such as family, partner, and vocational satisfaction. Available in 9 and 11 item versions, and items are answered on a 6-point Likert scale that ranges from 1 (very dissatisfied), to 6 (very satisfied), and total score is calculated as the mean of the item scores. The scale has been tested in populations including traumatic brain injury, trauma, and chronic pain. The LSQ-9 has been validated in a variety of conditions and languages. [173-176] http://www.rehabmeasures.org/Lists/RehabMeasures/PrintView.aspx?ID=958

- **McGill Pain Questionnaire (MPQ) –** A self-reported questionnaire used to evaluate a person experiencing significant pain. Patients select words that best describe or reflect their pain. It can be used to monitor the pain over time and to determine the effectiveness of any intervention. Scores range from 0 to 78, with a higher score indicating greater pain. [177, 178]

- **Multidimensional Scale of Perceived Social Support (MSPSS)** – A brief questionnaire that measures perceptions of support from family, friends, and a significant other. Includes 12 items, with 4 items for each subscale (family, friends, significant other). It has good internal and test-retest reliability, good validity, and a fairly stable factorial structure and has been tested in multiple languages. [14, 179] http://gzimet.wix.com/mspss

- **Pain Catastrophizing Scale (PCS) –** An instrument used in measuring catastrophic thinking related to pain. The PCS is a 13-item instrument derived from definitions of catastrophizing described in the literature[180, 181] as well as items from the catastrophizing subscale of the CSQ.[182] The PCS requires a reading level of approximately Grade 6. The PCS total score is computed by summing responses to all 13 items. PCS total scores range from 0 – 52. Of those patients who scored above 30 on the scale: 70% remained unemployed one year post injury, 70% described themselves as totally disabled for occupationally related activities, and 66% scored above 16 (moderate depression) on the BDI-II. http://sullivan-painresearch.mcgill.ca/pcs1.php; http://sullivan-painresearch.mcgill.ca/pdf/pcs/PCSManual_English.pdf

- **Pain Disability Index (PDI)** – A 7 item scale developed by The St. Louis University Medical Center that measures the impact that pain has on the ability of a person to participate in essential life activities including home/family responsibilities, recreation, self-care, and work. It has been validated to initially evaluate individuals to monitor them over time for assessing effectiveness of interventions. [183-185]

- **Pain, Enjoyment, General Activity (PEG) Scale –** An ultra-brief 3 item pain interference scale derived from various multidimensional pain measures that measures pain intensity, interference with enjoyment, and interference with general activity validated for chronic pain in primary care and general pain in ambulatory care.[186] Each question uses an anchored 0-10 scale: What number best describes your pain on average in the past week? (0= no pain, 10= pain as bad as you can imagine) How, during the past week pain has interfered with your enjoyment of life? And – how during the past week pain has interfered with your general activity? (0= does not interfere, 10 = completely interferes);

- **Tampa Scale for Kinesiophobia (TSK-11) –** Motivated by the conundrum of uncomplicated back pain patients becoming chronic, the TSK-11 scale has been developed and tested to determine the role that fear-avoidance (avoiding activities for fear of aggravation or re-injury) might play in the transition from acute injury to chronic pain behavior. [19, 187, 188]

Condition-Specific Scales with PDIR Items

- **Patient Specific Functional Scale (PSFS) –** The patient self-selects activities of daily living that are most impacted by their injury or limitation. This scale has the advantage of having a single scale within a practice that can be tailored to the majority of musculoskeletal conditions and is consistently scored. Its utility and psychometric properties have been documented in moderate quality studies. It may not be meaningful for certain activities a patient may select.[189-192]

- **Modified Oswestry Low Back Disability Index (ODI) –** The ODI measures disability and functional limitation related to back pain. It includes 10 questions addressing pain level, pain interference with ADL, sleep, etc. The original version includes a question on sex life which has been replaced in the modified version by a question on employment and homemaking. The ODI has been validated and is commonly used in clinical and research settings. [193-195]

- **Roland Morris Low Back Disability Index (RMQ) –** The RMQ has 24 statements regarding activities that are limited by the patient's low back pain. The patient marks each statement that describes their limitation. Positive statements are summed. A higher score indicates greater disability with scores over 13 points considered "high disability". It has been validated in numerous studies, but meaningful change requires larger differences in those with higher initial scores. [33, 193, 196-198]

- **Neck Disability Index (NDI) –** Templated on the ODI, the NDI includes 10 questions addressing pain and pain interference on common ADLs. It is scored similarly to ODI and has been validated for common neck problems. [26, 199]

- **STarT Back Screening Tool-9 (SBST-9) –** A brief 9-item questionnaire increasingly used in primary care for non-specific back pain especially where chronicity is a potential or current concern. Domains addressed include referred leg pain and comorbid pain, disability, catastrophizing, fear avoidance, anxiety and depression. Wording of psychosocial elements are particularly tolerable for acute care settings and may be used initially. As a screening tool, it has not been assessed as a progress tracking tool but its questions have been drawn from other tools validated for that purpose. [20, 200]

Mental Health Scales

- **Alcohol Use Disorders Identification Test (AUDIT) -** A 10-item questionnaire that screens for hazardous or harmful alcohol consumption, developed by the World Health Organization (WHO). AUDIT has been validated to classify 95% of respondents into alcoholics or non-alcoholics. The AUDIT is targeted for use in primary care settings and is recommended to be administered by a health professional or paraprofessional. A 3-question screening version is also available (AUDIT-C) which has been validated for identification of alcohol use disorders. [201]

- **Beck Depression Inventory (BDI)** – A 21-item self-administered scale for assessing depression severity. Validated for use in individuals age 13 and above. BDI-II is the most recent iteration updated to reflect diagnostic criteria in the American Psychiatric Associations DSM-4. Each item has 4 responses scored 0-3 and the scale is summed interpreting scoring as minimal (0-13), mild (14-19), moderate (20-28), or severe (29-63) depression. [202]

- **CAGE-AID –** Acronym for its four questions (Cut-down, Annoyed, Guilty, Eye-opener) about drinking and drug (Adapted to Include Drugs) habit self-awareness. Scored zero or one for each question with a total of 2 being considered significant. [203]

- **Generalized Anxiety Disorder-7 (GAD-7)** – A brief anxiety screening tool modeled after the PHQ. Includes 7 items scored 0-3 for a possible 24. A higher score indicates greater anxiety. [204] www.phqscreeners.com

- **Patient Health Questionnaire (PHQ-9) –** A brief 9-question scale that primarily screens for depression and rates its severity. It has been validated for screening for depression and depressive episode and is aimed for use in primary care settings. In addition to assisting in the diagnosis of depression, it may be of use in occupational health settings in slow responders as an indicator for risk of chronic pain. The central mental health orientation of questions may be off-putting to some patients in acute care for musculoskeletal complaints.[205] It has also been validated as a brief 4 and 2 question screen (PHQ-4, PHQ-2) to flag for depressed mood in the previous 2 weeks, primarily useful if positive to target who should receive the PHQ-9. [206-209] www.phqscreeners.com

- **Short Form; -36, -12, and -8 question versions (SF-36, SF-12, SF-12H, SF-8) –** The SF-36 is a general health status questionnaire that includes sections on general health and well-being, mental health, physical function and others. It is widely used and validated in research settings. It is somewhat lengthy and cumbersome to score by hand and requires licensing. Additionally, such scales are geared toward primary care practice and longer term changes in health. Although physical function and mental health subscales are responsive to change, other questionnaires and scales are preferred for routine outcomes tracking in occupational health and musculoskeletal practice settings. Overall, these scales might be most useful to establish a general health baseline once a patient's acute problem stabilizes and it is anticipated the patient will be seen in the practice over multiple episodes and disorders. [210-212] http://www.sf-36.org/

EVIDENCE and METHODOLOGY

Intervention/Experimental Studies

Randomized Controlled Trial (RCT) – A study that randomly allocates patients to treatment groups, usually blinding patients, therapists and/or study evaluators. Typically of high quality as randomization assures similarities of subjects within treatment groups.

Observational Studies

Cohort design – Cohort (retrospective or prospective) – A study that follows patients who self-allocate to treatment groups through the course of their care for a given occurrence of a condition. Larger, well-designed cohort studies may be of good quality, but lack of randomization predisposes to heterogeneity issues within groups, some of which may be able to be adjusted for with statistical methods.

Cross sectional – Involves observing a population to measure disease and exposure status. It is usually thought to be a "snapshot" of the frequency and characteristics of a disease in a population at a specific given time.

Case control – Is a study that compares patients who have an outcome (cases) of interest with patients who do not have the disease or outcome (controls). The study may retrospectively compare how frequently the exposure was present in a group to determine risk factors.

Case series – Is a study that describes a series of patients with an outcome of interest, may be of variable quality. Better designs use consecutive patients and include robust baseline and follow up outcome measures.

Case reports – Describes an individual case, typically only achieving publication if it represent a unique or unusual clinical experience.

Blinding

Blinding minimizes potential bias. Typically three levels of blinding are sought: patient, treating provider and evaluator. Many conservative interventions do not allow for patient blinding (e.g. someone is likely to know if they received a splint or a pill). At a minimum, single blinding of the evaluator as to what group a subject was in is expected.

Literature Reviews

Quantitative systematic reviews – Studies that review previously published clinical trials that include quantitative comparisons (e.g. meta-analyses). Systematic reviews should have rigorous and comprehensive methodology to identify relevant published research and include appraisal of study quality. Cochrane reviews frequently are of this type.

Qualitative systematic reviews – Similar to quantitative reviews but without systematic quantitative comparison or data pooling.

Narrative literature reviews – Such reviews typically do not include rigorous study selection methodology and may be subject to significant author bias.

Literature Retrieval and Review

1. **Initial systematic searches** of electronic databases (e.g. PubMed). Search terms used typically included MeSH terms for tests and interventions with conditions being addressed. Follow-up searches also included population attributes (e.g., workers' compensation, occupational).
2. **Abstract screening** for relevance.
3. **Original paper retrieval** with review for relevance, quality, outcome meaningfulness, and effect magnitude.
4. **Additional studies identified** through clinical summaries (e.g., reviews, texts), citation tracking, and feedback from public.

About Evidence for Physical Examination and Conservative Interventions

Conservative musculoskeletal care is typically care of first resort based on long standing practices. Typically 'low tech,' low cost, with minimal and rare side effects, it is frequently delivered in primary care settings, and by various health providers. The rigor and quality expected of high cost, higher risk, emerging, and tertiary interventions is less common for many routine physical examination procedures and conservative interventions. Much of the evidence summarized here would be considered Class "C" or "III" in ratings systems. Thus, the committee has not presented explicit *recommendations*, rather, *evidence summaries* guided by expert consensus to assist in formulating care options. Further, significant emphasis is made regarding tracking and documenting meaningful functional improvement with patients. Study attributes most likely to strengthen or limit confidence are characterized in the evidence descriptions.

Assessing Study Methodologic Quality

Attributes of study methodology quality vary according to the clinical procedure (e.g., diagnostic, therapeutic intervention) looked at, and specific research questions being studied. The American Academy of Neurology's Clinical Practice Guideline Process Manual [213] offers a comprehensive guide to systematic evidence review, quality attributes and consensus process that generally serves as the approach taken by IICAC.

General attributes identified when extracting evidence from studies include identification of population, the intervention and co-interventions and outcomes being addressed in each study. The clinical questions addressed such as diagnostic accuracy, therapeutic effectiveness, or causation are determined. Studies are extracted into evidence tables including quality attributes and/or ratings which are reviewed both by department staff and committee members (usually 2 per study).

Specific quality attributes include: Diagnostic Accuracy – design, spectrum of patients, validity and relevance of outcome metric; Therapeutic Interventions – comparison groups (no treatment, placebo, comparative intervention), treatment allocation, blinding/masking (method and degree: single, double, independent), follow-up (period and completion), and analysis (statistical power, intent-to-treat). Specific attention is paid to several factors including reporting of outcomes (primary vs. secondary), relevance of outcome (e.g., function vs. pain), and meaningfulness (clinically important change vs. minimally detectable change).

Synthesizing Evidence

Consideration of study quality (class), significance (statistical precision), consistency across studies, magnitude of effect, and relevance to populations and procedures were taken into account in preparing draft summaries. Special attention was given to clarifying conclusions related to the clinical questions of interest. Evidence, particularly with low tech and highly diffused examination and conservative procedures addressed here, is rarely truly "definitive," even when multiple studies exist. Inconsistent conclusions typically reflect error (systematic, random) and/or bias in studies. Data pooling via meta-analysis is useful to reduce random error when studies are of sufficient power and methodologic strength. Larger meaningful effect size may increase confidence in findings.

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